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Issue 84
February

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Media with passion

Sex, lies and video budgets

Electronic godfather Gary Numan. Need we say more?

I heard a scary story recently – all the more scary as it turned out not only to be true, but common practice. A band were signed up by a major (who shall remain nameless, as they all seem to be as good/bad as each other). They were wined, dined, promised the world, and sent into a big shiny studio to record their debut single. A few weeks later it was ready, via the efforts of the latest 'finger on the pulse' DJ, who had barely been inside a studio 12 months before, let alone knew his way around the pretty flashing lights and dials inside one. The band were unsure – it didn't sound much like the music they'd gone in with, but the record company seemed very happy. White labels were pressed, various radio stations serviced (a bizarre term, in my opinion) and their reactions eagerly awaited…

But, oh dear. The reaction was not good. Radio wasn't going to play the record. The band, a little disappointed at this small hiccup in their progress, were called back to the company office to hear (or so they expected) how this giant, powerful label was going to get around this blip in the plan. After all, a few weeks ago they were calling the band the discovery of the year, of the decade even. But this time, things were different: no back-slapping camaraderie, no promises of fame and fortune. What they got was dropped. No radio play meant no future.

This, it seems, is the new way of things. Big labels are now using radio as the final part of their A&R machine. This can't be a good thing. Pop music in the UK has (and I think few people would argue) become bland to the point of nausea. This is, perhaps, the inevitable outcome of allowing a tiny handful of people to decide what the public will and won't hear. Record companies, especially the majors, have allowed – almost encouraged – this to happen.

So now we have a chart aimed, with only a few exceptions, at pre-pubescent children who think poking their tongue out is a sexual statement and a symbol of rebellion at its most dark. How times change. I'm not against music for children, I'm really not. But when it becomes virtually all you have on offer over the radio and TV airwaves and in the charts, it gets a little frustrating.

What happened to developing bands and their music over a period of albums, letting them build up their talent and experience? What happened to rebellion? Pop stars used to be people that lived life on the edge, had lifestyles and appetites that left the older generation sickened and disgusted. I liked that. Now we have pop stars complaining if someone uses a rude word on TV. We now praise 'talent' that is nothing more than someone being vaguely acceptable at karaoke. We have a chart, an entire music scene, that is devoid of variety, has a thousand and one examples of exactly the same thing, is light-weight, puerile and ultimately, boring as fuck.

And yet, outside the charts, there is some incredible music around. Groundbreaking stuff, championed by smaller labels and independents in most cases. True, some major labels have their token rock or dance acts, but these are rarely a priority and usually fall by the wayside, disillusioned and poor, due to lack of label commitment.

Radio needs to understand that the British public is still interested in music after the age of 13, and in artists that don't just learn a few cute dance steps with each new single. Most importantly, it's capable of making up its own mind. So, Mr Radio DJ, play what is out there – all of it, not just the tiny little selection of mediocrity that you seem to think is all we need. And as for the majors, get some backbone. Fight for your bands if you believe in them and don't sign them if you don't.

But those of you working towards that elusive Holy Grail – the record contract – can take heart. There are a few labels around that are more interested in music than some others. Eagle Records, who I signed to in '97, just let me take three years to make an album of dark, industrial songs which, I have to admit, is about as likely to get on daytime radio as the memoirs of Charles Manson set to a breakbeat. I had no interference, no 'advice', no pointers on how to 'write a good pop song'. They left me alone, took the finished album, put it out, and, alongside me and the band, are now working hard to sell it around the world. No recording artist could ask for more. And for that true devotion to the way things should be, I am truly grateful.

Good luck.

Gary Numan

Gary Numan

contents

reviews

24 SPL Stereo Q
Stereo EQs are thin on the ground right now – how timely, then, that *Trevor Curwen* should investigate SPL's latest

28 CreamWare Power Sampler
A computer-based sampler that *doesn't* spank the ol' CPU? *Alan Branch* checks out this eminently affordable sampling wonder

32 MTA Signature Series
A pair of new EQ units from the tried-and-trusted MTA stable grace the rack of *Adam Fuest*... permanently!

36 Blue Microphones Blueberry
You may not know the name, but you soon might. The Blueberry is just one of a range of quality new mics from Latvia. *Jon Musgrave* steps up to the mic

38 Korg CX3A
If there's one studio mainstay that will never die, it's a mighty organ. Korg's revamped CX3 falls under the thousand-yard-stare of *Trevor Curwen*

42 Bias Peak 2.5
An upgrade for the popular stereo wave editing package. *Dave Harrow* checks out the new software from US-based Bias

sound advice

16 EQ Masterclass: Part Two
In the final part of our series, we take an in-depth look at how the creative use of EQ during mixdown can give your recordings that professional sheen

54 Mastering Cubase and Logic
MIDI manipulation is this month's hot topic on the sequencing front. Heed the wise words of *Adam Crute* and *Stephen Bennett* and make your life easier

CreamWare Power Sampler **28**

News **6**

features

44 Roachford
In today's 'throwaway' record industry, Andrew Roachford is a veteran, with a career that's so far spanned 12 years. He lets *Jon Andre Holley* in on a few of his secrets for success

48 Scanner
Robin Rimbaud is as well-known for his abstract and minimal compositions as for his now-infamous use of a hand-held scanner. *Oz Owen* talks production with the man himself

50 Studio File
Windmill Lane Studios in Ireland have played host to some of the world's greatest, a tradition that looks set to continue. *Oz Owen* takes the short hop to Dublin

regulars

6 News
The latest happenings, the hottest gear – find it here

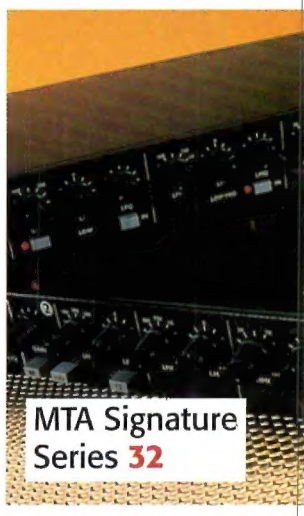
14 Open Mic
You have your say about the state of music production

58 A&R Dept
A panel of experts deliver the verdict on your demos

60 Help File
Our audio agony aunts soothe your technical troubles

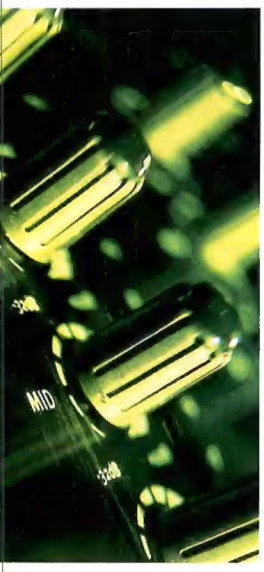
62 Readers' Ads
Second-hand bargains galore in our free ads section

EQ Masterclass **16**



MTA Signature Series **32**

Roachford **44**



on the cd

This month's guest samplists

Zach Danziger and Tim Lefebvre
In the last few years, native New Yorker Zach Danziger has surged to prominence as perhaps *the* most exciting drummer currently at work in the percussion universe. Apart from liaisons with heavyweight muso types, ranging from Chuck Loeb and Randy Brecker to Herbie Mann and Bob Mintzer, Zach has also worked with rockers Primal Scream and Irish sample dude David Holmes.

Five years ago, Zach discovered the emerging sounds of drum'n'bass through a compilation tape made by a journalist friend. "I was really blown away," he recalls. Zach initially started programming tracks, but soon started to embellish them with live drums.

In May 2000, Zach flew to London to showcase his skills at Zildjian ExperienZ. In a dingy club in Camberwell, Zach – along with drummers ranging from Keith LeBlanc to Andy Gangadeen – performed a mesmerising set, recreating his drum'n'bass grooves for a suitably stunned audience.

Zach is currently recording as Boomish (check out track 4 on this month's CD) with bassist Tim Lefebvre, whose diverse talents encompass acoustic and electric bass. Outside of Tim's sought-after low-frequency dexterity for the likes of the Wayne Krantz Trio, Bill Evans & Push, and, of course, Boomish, he has co-produced music with artists such as Till Brönner, and is currently remixing tracks for Uri Caine, Les McCann and Alphaville.
More from: www.boomish.net

Banco de Gaia
As part of the fertile London ambient/trance scene in the early '90s, the work of ambient technomeister Toby Marks captivated clued-up dance fans.

Following three home-produced cassette offerings, *Maya*, the first 'proper' Banco album, topped the independent charts in 1994. Tibetan monks, Egyptian prayer calls and Kenyan rain chants have all been fair sampling game in Toby's well-trodden cultural pathway, but here he puts Roland's former flagship analogue polysynth to work for *The Mix*. He told us: "The previous owner of the Jupiter 8, which I bought back in 1993, was none other than Harry H. Corbett Jr. of *Sooty And Sweep* fame – hence the collection name!" More from: www.banco.co.uk

SOFTWARE

track 1
PC and Mac

Propellerhead Software Reason p. 8
First came ReCycle and ReBirth, now, at last, the third instalment from the notorious Propellerhead Software is here! Reason is essentially a whole studio on your desktop, comprising all that crucial hardware needed to create great tunes... but in software form! But enough of our rambling – try out the demo for yourself.

COMMERCIAL TRACK

track 4
Boomish 'Yes Ma'am' (Lefebvre/Danziger/Zank). A taste of the sterling work of this month's guest samplists, from their forthcoming *Clearance Sale* LP. More from www.boomish.net

READER DEMOS

track 2 p.59
Art By Machinery 'Moa B': our demo of the month winners

track 3
PanTone 'Electrified Beats': last issue's demo of the month

SAMPLES

tracks 1 (WAV) and 5-36 (audio)

tracks 5-16
Boomish: d'n'b beats and basslines – one of our coolest sample collections ever

track 5 (93 bpm)
i. Loop 1 (full)
ii. Loop 1 (drums)
iii. Loop 1 (bass)

track 6 (170 bpm)
i. Loop 2 (full)
ii. Loop 2 (drums)
iii. Loop 2 (bass)

track 7 (174 bpm)
i. Loop 3 (drums)

track 8 (127 bpm)
i. Loop 4 (full)
ii. Loop 4 (drums)
iii. Loop 4 (bass)

track 9 (174 bpm)
i. Loop 5 (full)

track 10 (176 bpm)
i. Loop 6 (drums)

track 11 (179.5 bpm)
i. Loop 7 (full)
ii. Loop 7 (drums)
iii. Loop 7 (bass)

track 12
i. Loop 8 (drums)

track 13 (94 bpm)
i. Loop 9 (full)
ii. Loop 9 (drums)
iii. Loop 9 (bass)

track 14 (102 bpm)
i. Loop 10 (drums)

track 15
i. Loop 11 (drums)

track 16
i. Loop 12 (bass)

tracks 17-36
Banco de Gaia: Sooty's Jupiter Collection – classic synth workout

track 17
i. Bass 1
ii. Bass 2
iii. Bass 3
iv. Bass 4

track 18
i. Cloggy mouse

track 19
i. Dirty basstard

track 20
i. Drone 1
ii. Drone 1 high

track 21
i. Drooper

track 22
i. Hi gong
ii. Little gong
iii. Lo gong

track 23
i. Noisy 1
ii. Noisy 2

track 24
i. Orbiter 1
ii. Orbiter 2

track 25
i. Resonant

track 26
i. Soup dragon 1
ii. Soup dragon 2
iii. Soup dragon 3

track 27
i. Stormy

track 28
i. Strings 1a
ii. Strings 1b
iii. Strings 1c
iv. Strings 1d

track 29
i. Strings 2a
ii. Strings 2b
iii. Strings 2c
iv. Strings 2d

track 30
i. Swooper

track 31
i. Ticklish

track 32
i. Very sub

track 33
i. Virtual digi 1-3

track 34
i. Welcome 1-2

track 35
i. Windy 1
ii. Windy 2
iii. Windy 3
iv. Windy 4
v. Windy 5
vi. Windy 6

track 36
i. Wow

news

what's new in music production

Reason p.8
The amazing new software from Propellerhead is finally here – Alan Branch gets a first look

Time, ladies and gentlemen!

The Mix to merge with sister magazine *Future Music*

AS OUR REGULAR readers have noticed – many of you with concern – there have been big changes afoot at *The Mix* over the past few months. Up until now we've been sworn to secrecy, but here we can finally bring you the full story...

After six years, *The Mix* has reached its final issue, and will cease publication with the issue you are now holding. That's the sad news. But the good news is that *The Mix* will be joining forces with its one-time rival and (for the past three years) sister magazine, *Future Music*.

Over the next few months, *Future Music* will become bigger, better and more comprehensive, taking in territory previously covered by *The Mix*. So you can expect to see authoritative reviews of pro and semi-pro recording equipment, in-depth masterclasses and tutorials, and interviews with both cutting-edge and traditional artists from a wide range of musical genres. That's in addition, of course, to all the areas *Future Music* currently covers – in short, one comprehensive music technology magazine that offers all the best bits from the current incarnations of *The Mix* and *Future Music*.

So, sit back and enjoy the final issue of *The Mix*, and we hope to see you on *FM*.

The first issue of *Future Music* incorporating *The Mix* will be issue 106, on sale from 31 January 2001.

www.futuremusic.co.uk FutureMusic

ANOTHER CLASSY VALVE CLASSIC FROM TL AUDIO

British valve-meisters TL Audio are further expanding their Valve Classics range with the introduction of the VP-1 Valve Processor. This suitably retro-looking, chunky 4U package combines elements of the company's respected PA-1 Dual Pentode Preamp, C-1 Dual Valve Compressor and EQ-2 Dual Parametric Valve Equaliser to create a flexible valve front-end for any audio system.

Unsurprisingly, the VL-1 features the same distinctive raven blue 6mm CNC milled aluminium front panel found on its bretheren, plus those all-important General Electric US military-spec valves and high retention gold plated ceramic valve bases.

Key VP-1 features:

- Preamp stage that accepts mic, instrument and line levels
- Compression stage with a choice of valve or optical compression, including hard and soft knee characteristics
- Switchable phantom power
- Phase reverse
- 30dB pad
- Variable high-pass filter
- Expander/gate
- De-esser
- 4-band EQ with LF/HF shelving and fully parametric mids
- Peak output limiter with threshold control
- Full attenuation output level
- Input gain, output gain and gain reduction VU metering
- Stereo link

And for those dealing with the digital domain, there's an optional digital output with variable word length and sample rate. The price on this is still to be confirmed.

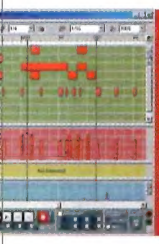
Price: £2,349

More from: TL Audio

Tel: 01462 680888

Web: www.tlaudio.co.uk

A flexible front end for any audio system: TL Audio's new VP-1 Valve Processor



Remix p.13
Revealed at last! Meet the winners of our Tacye/X-ert Productions Remix Competition

Ruff Driverz p.10
"With dance music, it's all about knowing what to effect and what not to..."

E4 goes Platinum

E-mu/Ensoniq family expands with new flagship sampling synthesizer

SAMPLING PIONEERS E-mu/Ensoniq have a whole line-up of new product launches this Autumn, and top of the bill is the E4 Platinum Sampling Synthesizer. The Platinum represents the latest in E-mu/Ensoniq's long-standing line of upmarket samplers to bear the E4 moniker, with a suitably awesome spec to boot. How does 128-voice polyphony, 128Mb RAM, 16 analogue outputs, 16 ADAT outputs, six analogue inputs, eight ADAT inputs, two SCSI ports, a 20 CD-ROM sample library and a 20Mb internal hard drive grab you?

Well, at £3,899 it's likely to strike your bank balance pretty hard, though that does include E-mu/Ensoniq's new RFX-32 Effects Processor/Mixer card, offering no fewer than 16 simultaneous stereo, 32-bit effects blocks. In addition to the advanced sampling and sound-sculpting tools for which the E4 family is renowned, E4 Platinum users can route external signals through its synthesis and effects engines and back out of any of its copious outputs.

Current E4 Ultra owners can buy the RFX-32 card on its own for £599, thereby significantly increasing the onboard power and flexibility of these older machines. Those useful additional Platinum inputs and outputs are also available as three optional boards to work in conjunction with the RFX-32. The prices are as follows:
RFX ADAT (16 in/8 out) £159; RFX Output (8 TRS outs) £239; RFX Input (4 TRS ins) £199.

The E4 Platinum Sampling Synth has a suitably awesome spec

Prices: see above
More from: E-mu/Ensoniq
Tel: 01753 630808
Web: www.emu.com

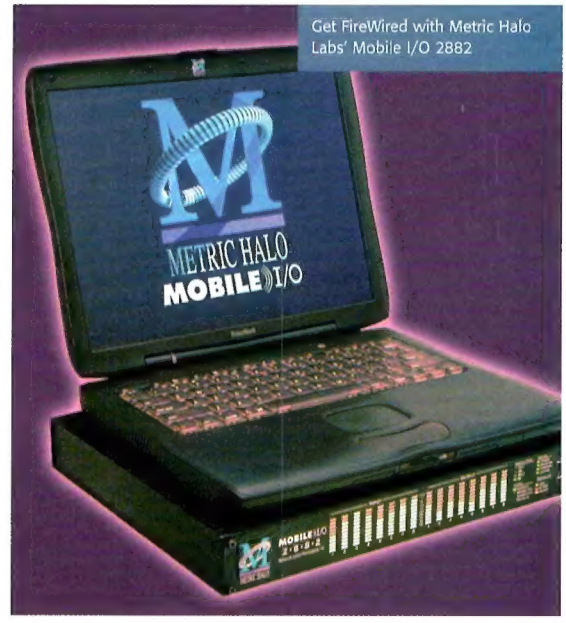
SAY HELLO TO HALO

Hands up those who are using FireWire? For the benefit of those who've been living under a rock and haven't heard of it, FireWire is Apple Computer's implementation of the IEEE 1394 standard, a scalable, flexible, low-cost digital interface that integrates the worlds of consumer electronics and personal computers. Think of it like a modern MIDI-for-everything-type interface. Apple, quite rightly, predicted that FireWire would become the interface of choice for digital audio and video.

With this in mind, Metric Halo Labs' Mobile I/O 2882 is a 1U portable, high-quality, modular FireWire-based multi-format audio I/O unit for FireWire-equipped Macintosh and Windows computers. Aimed at pro and multimedia applications, the Mobile I/O supports simultaneous input and output of all major audio standards, including analogue balanced and unbalanced (mic, line and instrument), S/PDIF, AES/EBU and, of course, IEEE 1394.

As implied by its 2882 moniker, the unit provides eight channels of analogue output (24-bit, 96kHz-compatible on TRS jacks), eight channels of analogue input (24-bit, 96kHz-compatible; four on TRS jacks, four on XLR), plus an independent stereo headphone mix and output. As the system is modular, multiple units can be utilised with system support for up to 128 channels of 96kHz audio, or 256 channels at 48kHz. That's a *lot* of music tracks. Like we said, professional...

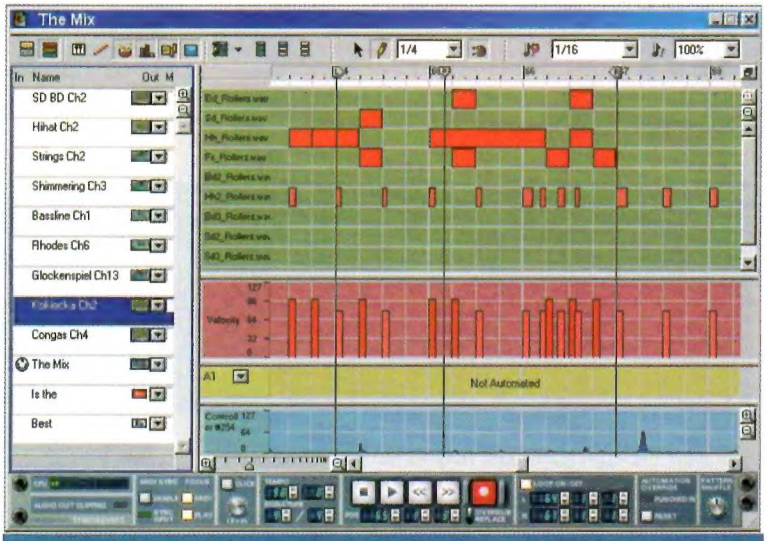
Price: £1,249
More from: Unity Audio
Tel: 01440 785843
Web: www.unityaudio.co.uk



Get FireWired with Metric Halo Labs' Mobile I/O 2882

Dr:rex loop player: filters, pitch, pan, envelopes for individual slices of ReCycle grooves – is this the best you've ever seen?

NN19 Sampler – named in honour of that classic tune, perhaps? – with loaded Rhodes program ready to fire



The Reason Sequencer edit window is automatically customised for each track, according to the device loaded. MIDI notes, velocity, automation and controllers are easily edited

SubTractor polyphonic 2-oscillator synth. Check out the Phase Offset Modulation on each oscillator!

The ReDrum 10-channel drum machine with pattern-based sequencer

The age of Reason

Beta-tester Alan Branch has a first look at the all-in-one software studio rack that's taking the recording world by storm

IT'S HERE AT last! Back in issue 76, we brought you news of Reason, the amazing new software studio rack from software gurus Propellerhead – the team that bought us ReCycle and ReBirth. Now the wait is finally over and Reason is shipping. This ultimate all-in-one package includes such delights as a mixer, sampler, Rex-file player, drum machine, synths, pattern keyboard sequencer, effects… even a full multi-track sequencer!

I was lucky enough to be one of the 50 hand-picked beta-testers out of thousands of applicants, and I can tell you Reason looked great right from the first version. All the rack devices can be added easily, configured however you want and multiple units can be piled up – right up to the limit of your CPU.

One of my favourites is the Dr:rex, a sampler that plays Rex files. These are loops that have been chopped in ReCycle so each beat is an individual slice, making tempo changes automatic to the tempo of your song. But now each slice has parameter controls for panning, pitch, gain, and release. As well, Dr:rex has five EQ filter options and resonance, as well as two envelopes, an LFO, pitchwheel and modulation, *and* the parameters can be automated.

With a simple click, each slice has a MIDI trigger sent to the sequencer so you can manipulate timing and placement, meaning creating and arranging loops has never been easier. The attention to detail is exceptional, with each piece of soft/hardware looking and feeling like a real unit.

For all the connections, pressing Tab turns the rack around to reveal the rear, showing all the outputs of each unit together with cables that actually bounce as they're dragged from one jack input to another! And there are even options like CV and gate for linking units, with all the associated power plugs and air vents.

The sequencer has an editor for each instrument, so the Dr:rex has its slices listed while the ReDrum lists its drum parts. There are also pattern and velocity lanes for quick song creation.

The sound is fat and easily brings real hardware to mind. Extras include a well laid-out sound database and support for ReWire, of course, so it can link easily with Logic or Cubase. I could go on and on, but there's no need, as you can check out the full demo on this month's cover CD to see what it's all about. You have no Reason not to!

Price: £299

More from: Arbiter

Tel: 020 8970 1909

Web: www.arbitergroup.com

CD

track 01

Try out Reason for yourself: demo for Mac and PC is on the cover CD

A flock of E-mus

Four new sample-based sound modules

E-MU/ENSONIQ HAVE announced a veritable plethora of newly-launched modules. First up is the XL-1 Turbo (£869), an expanded version of the Xtreme Lead-1 techno/electronica-oriented BPM Synthesizer, with six outputs, 128-voice polyphony and four ROM slots to boot.

Next, Proteus Custom (£649) is simply a standard Proteus 2000 module without a ROM board fitted. Instead, the user can choose to fit either Orchestral ROM Vol. 1 (£289) or Orchestral ROM Vol. 2 (also £289), both from the E-mu Virtuoso module. Alternatively, those wanting to author their own ROMs in an Ultra sampler for subsequent transfer can fit custom Flash RAM boards (£353).

The intriguingly-named Mo'Phatt Urban Dance Synth (£649) features completely new hip hop and urban samples, 64 voices, 12th order filters, two ROM slots and two outputs. And finally, Planet Earth completes the latest line-up, featuring a brand new soundset of world instruments, ethnic sounds and multiple percussion sets.

More from: E-mu/Ensoniq

Tel: 01753 630808

Web: www.emu.com

Welcome to Planet Earth: just one of E-mu/Ensoniq's plethora of new modules

VALVES IN THE UNDERWORLD

A healthy mix of cutting edge and tried-and-tested music technologies is a good thing – so might argue Underworld's Rick Smith. For this discerning dance duo (third lynchpin Darren Emerson left earlier this year) have opted for a 24-channel TL Audio VTC (reviewed issue 70) as the focal point of their London-based private studio, complementing their 32-channel Pro Tools system. The new console was immediately put to good use, checking the original masters for their *Everything, Everything* extravaganza, apparently the world's first live DVD.

Rick commented: "I knew I could trust what I was hearing through the console, and we were instantly happy with the sound we were getting. Now the VTC has become part of our writing process, since we tend to write and mix material at the same time. Having previously associated valve technology with increased noise levels, we were immediately impressed by the quiet noise floor of the VTC – and the sound of the EQ is unreal."

And that 'unreal' EQ will no doubt be featuring on Underworld's next studio album. Rick's only regret is that they can't take the console on tour. Might we suggest badgering TL Audio for a 'live' version? Maybe not. Valves don't travel too well, after all...

More from: TL Audio

Tel: 01462 680888

Web: www.tlaudio.co.uk

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Track notes Ruff Driverz

After spending the summer ripping it up in Ibiza, Brad Carter and Chris Brown are busy putting the finishing touches to their second album...

TM: So you guys built this studio?
Brad: "The studio may be fairly compact, but look at the sound we get! This is the third studio that I've had to build and I made all my mistakes on the first two. With this one though, I've got the acoustics right, I've got the set-up right. It sounds brilliant.

TM: Tell us about your set-up
Brad: "A lot of the dance stuff is done with really minimal equipment. With dance music it's all about knowing what to effect and what not to, because if you effect too much, you just end up with a big mushy bottom end and no clarity. We've been doing it for quite a long time now so we've pretty much got it sorted, and there's not a lot I can't do here. And we mix stuff in the Mac now, so the Mackie [desk] is really just for monitor returns."
Chris: "That' s right, everything's all right until that Mac fucks up, which it does regularly!"

TM: So you've got a troublesome computer on your hands?
Brad: "Well this computer's on every day, between eight and twelve hours a day, being used constantly. So, it might crash twice a month, and that's not bad, really."

Ruff Driverz' new album is due out in Spring 2001

TM: How are you getting most of your sounds?
Chris: "Although we're doing a lot of stuff in the Mac, in terms of sounds, we get quite a lot off the Roland JP-8080, MC-505 and the Novation SuperNova."
Brad: "Yeah, we've just stopped using the Juno 106 after using it a lot over the last six years. But practically every track we've done we've used the 106. It's starting to get a bit knackered now, though, a bit too crackly. But you can still get some brilliant sounds out of it."

TM: And once you've got those great sounds...?
Chris: "In terms of mastering, the TC Electronic Finalizer puts the fairy dust on Ruff Driverz' sound. We borrowed one about two years ago and it made one hell of a difference."
Brad: "We just used it on some demo tracks and people who were used to hearing our stuff started asking what the hell we'd done to our tracks, as they were sounding wicked. We forgot that we'd used it, so we didn't have a clue what they were on about. I'd been after one for ages, so when we realised, we went out and bought one."

TM: Tell us about the new album
Brad: "It's going to be much more of a listening experience, and a bit more experimental. It's going to be the kind of album we've always wanted to make, which is why we're taking our time and making sure we're really happy with it. It's not what people would expect from us. You can't second-guess house music, you just have to do what you feel you want to do. So watch this space, really. We'll see what happens."

RUNNING IN THE FAMILY

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intermusic.com is the ultimate free resource for musicians from every genre and ability. From up-to-the-minute news, reviews, software (www.musicshareware.com) downloads and cool samples (www.samplenet.co.uk) it's everything you need to make music. Check out interviews with Laurent Garnier and last month's *The Mix* star samplist Keith LeBlanc, and remember that you can buy loads of instruments online too, at www.intermusic.com/piedog. So get logged on to the one stop musicians' resource: www.intermusic.com.

FUTURE MUSIC
It's Gear Of The Year time in the February issue of *Future Music*. Pick it up to find out which synths, samplers, effects, mixers, recorders, software and albums have made the biggest impression in the last 12 months. There's the usual reviews, including Alesis AirFX, Tascam US-428, Rode NT3 and the new Control Freak from Kenton, plus a round-up of budget sequencers. Interviewed this month are Vince Clarke, Hacienda and Rennie Pilgrem. Find out how to get better bass in our *Pro's Guide* and learn exactly what FireWire is all about. It's on sale from 29 December.

COMPUTER MUSIC
After what seems like an age in the development lab, Propellerheads' Reason is finally here, and *Computer Music* have a world exclusive review of what promises to be the first truly comprehensive software studio. They also explain the vital importance of getting your arrangements right and reveal which bits of kit have won their prestigious 2000 Reader Awards. Take into account a round-up of MIDI controllers, the rest of the month's reviews and an obscene number of tutorials, and you've got quite an issue. Computer Music issue 29 goes on sale on Thursday December 28.

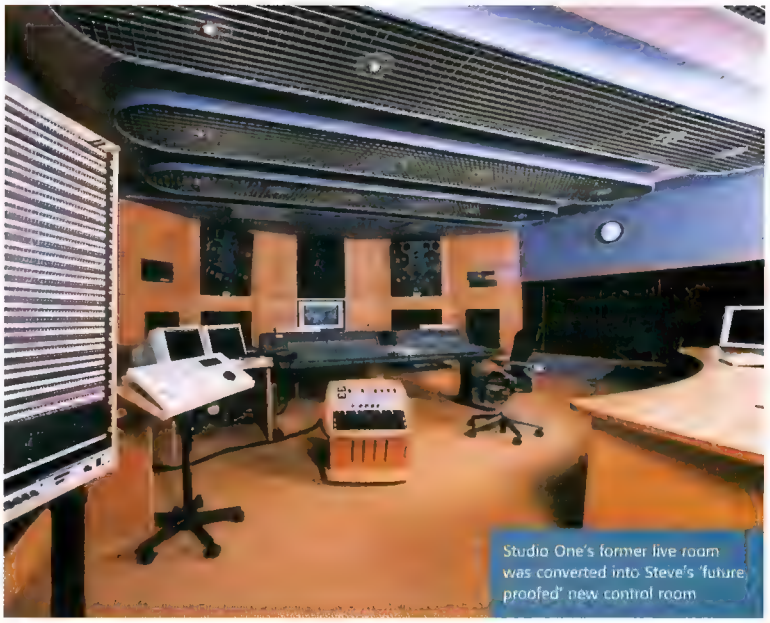
Sign of the times

Producer Steve Lipson moves into London's Battery Studios

STEVE LIPSON, KNOWN for his sterling production work with the likes of Annie Lennox, Cher, Sting and, most recently, Ronan Keating, has established an impressive writing and recording facility in London's Battery Studio One.

Steve relocated his considerable collection of high-end recording gear – Euphonix CS3000 console, Fairlight MFX3 Plus, extensive Pro Tools set-up and analogue recorders – from his former recording home at the old Power Plant building. The move necessitated converting the existing live room into a much bigger control room. The remaining space, including the old control room and lounge, has been converted into a live room, overdub room and a programming suite – after all, Lipson was one of the people who pushed the buttons for Trevor Horn before deservedly becoming a well-known producer in his own right.

The studio re-vamp was awarded to Munro Associates. MD Andy Munro commented: "Although the control room currently features stereo M4 monitors, we have future-proofed it by ensuring full 5.1 compatibility. I wanted the acoustics to be more natural than most designers seem to go for, and the materials chosen have a slight roughness to them, which gives the room a comfortable, yet utterly functional feel and look." Lipson plans to use the new facility for all future projects.



Studio One's former live room was converted into Steve's 'future proofed' new control room

Play to win

Around the world in ten prizes, in our tremendous competitions round-up…

IT'S BEEN QUITE some time since we last ran a competition round-up to tell you who's won what – back in issue 66, in fact. So, without further ado, let's bring you all bang up-to-date; for a lucky few, the wait is finally over.

Cast your minds back to issue 71. You can't make music without a decent set of speakers, right? Well, you can, but how about a little listening sesh in the garden using a pair of *wireless* ones? We had two pairs of Ross wireless speakers up for grabs; the first went to Miss S. Walker of London, while the other went to Tom Gaskell, an architectural student at The University of Liverpool. Or rather, to his bedroom studio back at his parents' Staffordshire home, where Tom's been known to knock up a house tune or two during the holidays using his trusty Amiga 1200. Don't mock – one of his demos was favourably reviewed in our sister mag *Future Music*, so there.

And speaking of computer-based music, the very lucky winner of our Soundscape Mixtreme 2000 Digital PowerPak competition in issue 72 was Rob May of Liverpool. Upon hearing of his good fortune, Rob revealed "I'm currently using a Korg D8, which provides me with excellent quality recording, but limited mixing capability for what I want to do." Which is? "Writing my own songs, influenced mainly by classic acts of the '60s and '70s, ranging from Harry Nilsson to Aphrodite's Child. As a complete recording and FX package, the Soundscape Mixtreme is going to make such a difference to the development of my music. Now I don't have to buy a separate synth and sampler – for the first time, I can really begin realising the production of my own songs as I want them to sound."

Remaining, briefly, with computer-based music production, in issue 72 we also ran a competition to win two copies of Sonic Foundry Vegas Pro multitrack media editing system. Winners here are Londoner Paul Drogan and Aussie James Canning, whose 'Beach Bums at Port MacQuaries'-themed postcard entry was almost enough to make us want to emigrate en masse.

With samplers playing a central role in much of today's music-making, it came as no surprise that we had an overwhelming response to our Yamaha A4000 competition in issue 76. But there could only ever be one winner, and that is 21-year-old Ady Harling of Nottingham. Ady's only been making his own brand of Aphex Twin-inspired music since last Christmas, yet already has over 40 tracks posted on peoplesound.com – not bad going, eh? "The A4000 will definitely come in handy," exclaimed the up-and-coming experimenter.

You gotta enter if you wanna win! That's what Nick did...

Now let's fast-forward to issue 78, where we nabbed a couple of Sherman Filterbanks – the daddy of filters – to give away. The first winner out of the hat was Imogen Hicks of Hemel Hempstead: marketing administrator by day, vocalist on partner Martin's recording exploits by night. Martin has a DJ scratch record out now, with a garage track to follow soon. But will it feature the Filterbank, we ask? Also now a proud owner of a Filterbank is blacksmith/"impecunious hobby composer" Nick Maynard of Maidstone. "That issue of your mag was certainly the lucky one for me," he exclaimed. "I picked up my first-ever copy to check out the sample CD, about three days before the competition ended. I should think all your subscribers will be spitting tacks." Well, there's no justice in this world…

And finally, Lady Luck cast a ray of light over Mr C. Mascarenhas of Luton and David Carlsson of Sweden, both winners of a *Michael Pinder Presents: Mellotron* sample CD by virtue of their suitably mellow postcard entries in another issue 78 competition.

And that, as they say, is that. Ongoing competitions in *The Mix* still include the Focusrite, Phat Boy, and this month's Breakbeat compo (see below), so if you've entered, keep your fingers crossed, as we'll be choosing the winners shortly.

COMPETITION: THE ULTIMATE BREAKBEAT GIVEAWAY

UK rap and ragga pioneers Music Of Life have been specialising in breakbeat albums since 1986, as well as releasing albums by the likes of Norman Cook, Paul Oakenfold and Afrika Bambaataa.

Such has been the demand for their out-of-print, 12-volume *Beats, Breaks & Scratches* collection that it has been remastered and re-released with new sleeves, on both CD and vinyl.

We've got a full set of the former up for grabs, and Music Of Life have even thrown in copies of Norman Cook's *All Star Breakbeats* and Paul Oakenfold's *Bust A Groove* sample CDs to add to the pot. All the lucky winner-to-be has to do is answer the question below, and send the answer (plus full contact details) on a postcard to *Breakbeat Compo, The Mix*, 30 Monmouth Street, Bath BA1 2BW, to arrive by 18 January 2001. The first correct answer pulled from a hat will receive all 14 CDs. The second will get the first six CDs from the *Beats, Breaks & Scratches* series, and third, the first three CDs. Simple as that.

The question:
Which big-name DJ's Music of Life CD is called *Bust A Groove*?
1. Paul Willowfold
2. Paul Maplefold
3. Paul Oakenfold
4. Paul Sprucefold

The *Beats, Breaks & Scratches* collection is available to purchase on CD for £12 per disc, or £10 each for the vinyl versions. For further information on Music Of Life's complete range of breakbeat and sample albums, check out: www.musicoflife.com.

We have a result!

The winners of our Tacye remix competition convene at Far Heath Studios

Salvatore Arancio

FOR ALL OF you who entered our Tacye/X-ert Productions remix competition back in issue 77, it's been a tense few months waiting for the decision. Now, after much deliberation and careful listening on the part of the judging panel, we have the results...

In the Underground Mix category, the prize goes to Sl@ve (a.k.a. Steven Laverick and John Veitch) for their bangin' 'Nightmare Mix', which the judges deemed has broad appeal and will do the business on the dancefloor. "The track has lots of drama," commented producer/judge Mike Bennett, "and is an interesting twist on old skool".

There was a surprise result in the Commercial Mix category, with the panel choosing two joint winners. First up are Billy Attridge and Philip Coady for their 'Ki-Aura Mix', whose well-crafted arrangement, catchy vocal hook, bang-on EQ'ing and selective backwards vocals impressed the judges. The other winner is Terry Holman for his highly-imaginative 'Televisual Delirium Mix', by virtue of its great intro and intriguing, minimalistic keyboards.

The winners all decamped for a weekend in November to the plush Far Heath Studios in Northamptonshire, where, under the expert eyes of producer Mike Bennett, engineer Angus Wallace and Steve Valentine of Rebel Recordings, they put the final touches to their tracks in preparation for release on X-ert/Rebel Recordings. Look out for those remixes of Tacye's 'There's a Shadow' in your local record shop sometime in February 2001.

So, big congratulations to the winners and thanks to everyone who made the effort to take part. You'll find the full results of the competition, with Mike's comments on each track submitted, on *The Mix* website. So get yourself over to www.themix.net and head straight to the *News* section to see how you fared.

If musical comedy's your bag, check out Tacye and Mike Bennett's latest project: *All Cloned Up* is on now at Battersea's Grace Theatre until 14 January

the runners-up

COMMERCIAL MIX

1. Tone Front Studio: A lovely [illegible] 4. Time Control: Danceable, funky, Spitfire-esque two-to-the-floor mix. Very tight groove. 5. Nigel Wilson: Tribal Breaks Mix Dark, an early but [illegible]

UNDERGROUND MIX

2. Martin Sharp 'Dunebug Underground Mix': An excellent electronically-orientated interpretation. 3. Tim Kagan: A nice [illegible] structure, with a superb moody and brief build. Beautifully. 4. Neo Land: Nice ugly mix with great EQ, crispy loops and a great weird guitar sample. 5. Andy Ford: Very original. The gated vocal works well, and the [illegible] of the mix is an asset, as it allows what is there to breathe.

open mic

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Who are you kidding

Re: Rob Turner's review of Radiohead's *Kid A* (issue 82). Rob has obviously led a sheltered life, as he seems to have missed the signposts that would have led to an understanding of where *Kid A* is coming from. Tell him to have a chat with someone who possesses a decent record collection, including Faust, early Kraftwerk, Can, Pere Ubu, Suicide, early Cabaret Voltaire, Joy Division *et al*. In my not-so-humble opinion, this record will become hailed as the most influential of this decade. I'm not some blinkered fan – I borrowed this record from a friend. I think it is a remarkable achievement in these oh-so-bland times. I'm afraid it's Rob who needs to remove his cranium from his sphincter.

Tom Winder, by email

You've aired your views, shared your wisdom, and some of you have even won a Shure Mic for your troubles! So, let's go 'round one more time...

Talentless

Are manufactured bands killing British pop music? In a word, no, and I guess it really depends on how you define 'pop' music. For me, acts like Westlife, The Spice Girls and All Saints identify 'pop' music, and in all honesty you could include the likes of Travis, Oasis and Supergrass in that equation too.

My pet hate within the pop music industry are these 'stage school Sylvia Young' graduates who step into record company offices and are given makeovers and instructions on how to sound and look, and who usually release cover versions of songs their pop predecessors churned out during the '80s. With these acts (they are certainly not bands) there is no creativity.

As a fan of dance music and hip hop, whatever happens within the world of the above-named has no relevance to me. I find that quality dance (and I'm not talking Sash or ATB here) music simmers nicely under the surface and wanders over into pop music territory unexpectedly. So, my point is that British music is hardly being killed by manufactured bands. Let them sit on their stools while wearing Maharishi combat trousers, moronically swaying along to their pathetic ballads while British dance and indie music defines itself within the parameters of what used to be known as 'the underground'.

Teenage girls are quite happy to listen to boy and 'guurly' bands – throughout musical history they have never been the most discerning connoisseurs of sound. So who are we to ram a Bukem remix or an Orbital album down their throats as if we were to administer some kind of musical cure? The cure comes with age, maturity and, to some extent, intelligence.

Richard Queensborough, by email

Cubase rage

I was very pleased when I saw *The Mix* is running a series on Cubase, as I have used the sequencer for about a year in anger (excuse the pun), but still, there's always more to learn. I laughed when I read your opening phrases regarding the release of VST 5 and Steinberg hoping we will rush out and buy it in droves. May I say that paying for it is one thing, getting our sticky palms on it is quite another.

Let me clarify: I received a letter from Arbiter inviting me to attend a VST 5 seminar at my local dealer, the M Corporation Ringwood. I attended on the day and was indeed very impressed with the array of new features and high quality bit resolution – it only crashed once during the whole demonstration! After the demo we were told that we could buy a copy there and then, and anyone who wished to upgrade could take advantage of the special price of £99. I have VST 3.7r2 and asked how much it would cost to upgrade to VST 5/32, and was told £149.

In utter delight I went into a stupor, mumbling "Gimme Gimme Gimme", but was soon brought back to earth when I was informed there would be a two-week delay, and if I wished to pay for it on the spot I would be first on the list to receive a copy, and would I like to leave my dongle to save time? To the first request, I gave the guy a cheque for £149; to the second, I uttered two words: the first began with 'F' and the second ended with 'F'.

This was a good move on my part, because after two months and numerous false hopes I am still VST 5/32-less. Every week I phone, and am told that delivery will be anything from two days to two weeks. I am always asked for my phone number so someone can get information and call me back, but they never have called back once.

The trouble is, I have told my regular clients that I am about to upgrade, and now they all want to wait until I have the new package to take advantage of the improved sound quality and extra functionality, so I have very little work at present. The only saving grace is that you nice people at *The Mix* included a demo version on your issue 82 CD, so at least I can get to grips with the new layout.

How many other people have had this problem? This isn't the first time that I have been messed around when buying studio equipment.

Jules Freeman, Ourgate Studios, Southampton

When Cubase VST 5.0 for PC was released in July 2000, we were expecting that a large number of Cubase users would be wishing to update from earlier versions. However, the release of version 5.0 has exceeded everyone's expectations, including Steinberg Media Technologies AG in Germany. As a result, Steinberg were not always able to meet our orders.

This is the first upgrade involving a dongle

exchange since VST was introduced. The new dongle design has an improved copy protection mechanism and should also make any future upgrade easier.

Unfortunately, the huge demand has meant that Steinberg have been unable to manufacture dongles fast enough, even at the rate of 12,000 per month.

However, supply has now (November) improved greatly, and at this time we have no outstanding back orders for any Cubase VST 5.0 updates. In the meantime, we have recruited an extra member of staff to deal with sales and a further two technical/pre-sales staff in order to hopefully eliminate any problems of this nature in the future.

Finally, I must apologise for all the inconvenience we may have caused to any UK-based Cubase users. Being a musician myself, I fully understand the frustration involved, and we will endeavour to make inconvenience of this nature a thing of the past.

Risto Sampola, Steinberg Product Manager, Arbiter Group Plc

The end

When then-editor Chris Kempster approached me a few years ago to write for *The Mix*, I thought he was kidding. As a working engineer and producer, I can hardly manage to write a letter, let alone a 1,500 word article! Chris told me the idea was to produce a magazine unlike others, run by a small team but written by a collection of working engineers, programmers and producers. "Just write like you're explaining the gear to someone in the studio," he said, "and leave the grammar to us." "Brilliant", I thought, "I'll have a go". That was a long time and many thousands of words ago.

We all read magazine articles by competent technical people, but so often they read much like wordy manuals. The articles often give the impression that the testing is being done in someone's bedroom and not in a real studio. Articles in *The Mix* are written by people who are actually making records – records that people buy! Most of the gear reviewed is used and tested during working sessions, which results in hands-on articles written from genuine experience.

Many others have since tried to imitate this style. One magazine made me laugh when it actually claimed to have thought of the idea! The editor said that, unlike other magazines, they had 'real working engineers and producers' writing for them. (Needless to say, no details of their recording credentials were forthcoming...)

Personally, I've always enjoyed the down-to-earth reality of *The Mix* and the way it has continually shown the way forward. I hope that Future Publishing can harness the creative force that was behind *The Mix* and merge this into its *Future Music* and *Computer Music* magazines. It would be a great loss to the general public and to those of us in the music business alike if the skills of the team behind *The Mix* were lost.

It is, I think, a great pity the magazine has to close, and I would like to congratulate all at *The Mix* for producing one of the best music magazines around. The team that has put it together for the last couple of years has done a fab job. So, goodbye to *The Mix* and hello to the Future! Happy mixing.

Alan Branch

LETTER OF THE MONTH

What's it all about?

What is ambition? An innocent-enough thought, but then I started to think. Our lust for new gear, 30-hour sessions in the studio perfecting the same take, hours spent with software manuals, the up and downs with record labels and the music business – why do we do this? Is it ego? Is it the pleasure of seeing others enjoy what you've made?

The question gets more confusing the more people you ask. Our band A1 People has been recording for the last two years, and when we looked back, we realised that our ambitions have changed from electro to p-funk, gospel and hip hop, even during that short time.

I then thought about my studio set-up. Just over a year ago, I moved out of my old recording studio and decided to set up at home. Ever since I could remember, I had pined for one of those studios that you saw on TV with a live room, a big desk and someone wearing a pair of DT100s. Enter the 'supercomputer'! Suddenly my world was turned on its head. I could achieve more on my G4 than with all the other gear put together! So why bother with the expense and hassle of hiring a place when it could all be done in my spare room at home?

What other ambitions had changed over the years? My teenage years were spent playing bass and saxophone in local 'alternative' bands. My ambition was to attract the opposite sex. Then I pronounced the guitar dead. No more waiting for musicians to roll out of bed – the sequencer never sleeps! Pentatonik was born, and off I went, playing techno in warehouses alongside the likes of Orbital.

This was the birth of something new, or so I thought. No more guitar solos – bring on the samplers and synths, quantise everything and make music no-one has heard the likes of before. But what else do we pronounce dead? The orchestra? The choir? The pedal steel guitar? Who am I to say I have heard everything these instruments can offer? So Pentatonik was pronounced dead, or at least unconscious, and A1 People was born: a band – three people, three sets of ambitions and even a guitar!

What it boils down to is that sometimes your ambition can blinker the way you work. What I found was that working with people as well as technology stopped me from only looking at the world in one way. I began to realise that new is not necessarily better; sometimes old is. Ambition must be harnessed and released. New technology is only good if it helps you do that. It is all too easy to forget the song and lose the afternoon moving one hi-hat back and forth. We strive for perfection and ambition becomes an obsession.

So don't lose sight of what music is. Take time to listen to great music, both old and new, and be inspired by ambitious music!

Last summer, I played bass for Apollo 440 on their European tour. Before stepping on stage in front of 50,000 Polish fans, Noko turned to me and said, "This is what I've wanted to do since I was 10 years old." Ultimately, ambitions are there to be fulfilled, but when they are, isn't it a problem? I have my G4. Now I want a G5! So what is ambition?

Simeon Bowring, A1 People

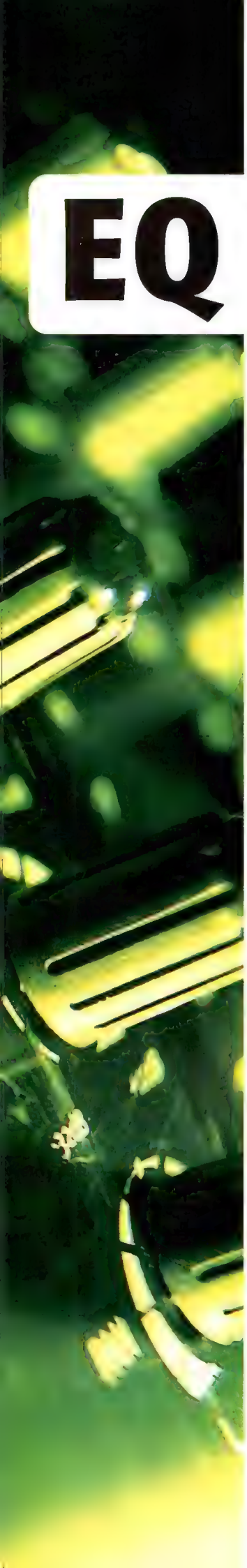
Thank you and goodnight.

The ambitious A1 People: Simeon, Malcolm and Tom

We never tried to be the biggest, but we were the best, thanks in large part to our 'family' of writers, who are, without doubt, the most knowledgeable and experienced in the business. So cheers, guys, and thanks to all the manufacturers and artists who supported the mag over the years, and above all to the readers – remember us when you're famous (if you're already famous, we accept gifts...). And we hope y'all will join us on Future Music. Adios!

Andrea Robinson

GAIN
HIGH
MID
LOW



EQ Masterclass: Using EQ in the mix

part two

The mysterious art of EQ: often the factor that can bring tears of joy or misery when playing back your mix from the night before. This month, we investigate how the creative use of EQ can put that professional sheen on your tracks

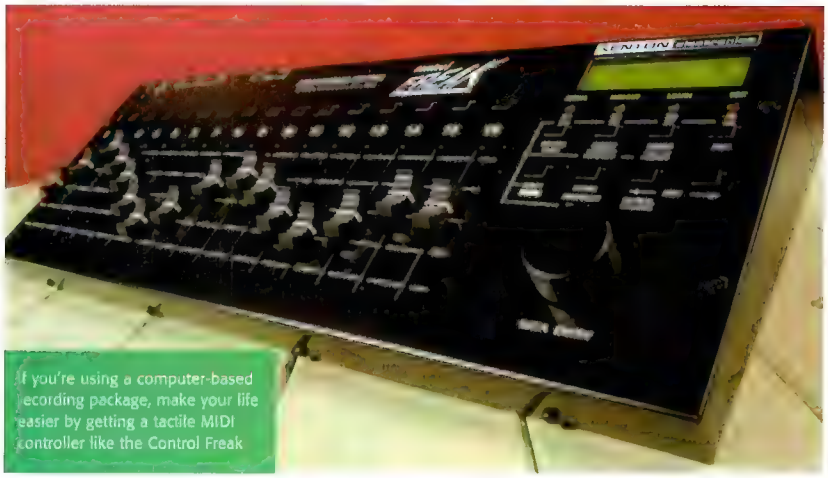
words **Trevor Curwen, Alan Branch, Jezar Wakefield, Jon Musgrave and Sean Vincent**

Even seasoned recording engineers will concede that you can't make a silk purse out of a sow's ear. If you followed our advice in Part One of this article (see last month's issue), you won't have any sows' ears to contend with, and will instead be looking to put that final sheen on your brilliantly-translucent sonic gems.

Last month, we looked at taking a two-pronged approach when using EQ at the track-laying stage: firstly, to minimise problems further down the line by cleaning up unwanted artefacts in the individual sounds, and secondly, to subtly sweeten up the sounds. Used properly, these techniques will yield a clean, high-quality recording that accurately captures the natural sound of the recorded instruments. This allows maximum flexibility for further tweaking at mixdown, as all the individual sounds should be problem-free, leaving the EQ free to take a more creative, rather than a remedial, role.

So, in the final part of this series, we'll examine this creative use of EQ at mixdown, when those individual sounds have to mesh together as a complete entity. The additional EQ can be used to bring out the best in your tracks by helping sounds fit smoothly

Faster pussycat



If you're using a computer-based recording package, make your life easier by getting a tactile MIDI controller like the Control Freak

together side-by-side in their natural position in the mix, and help to cure any problems of clarity resulting from one sound obscuring another.

Many engineers and producers will tell you that each individual song should be taken on its own merits and treated as a unique entity when it comes to mixing. However, they will still have a repertoire of general techniques and more specific EQ tweaks that work for particular instruments time and again. What we are looking at here are not tweaks for specific instruments *per se*, (see the *Tips of the Trade* boxes on pages 20, 21 and 23 for these) but more of an overall view of how EQ can be used to pull the mix together.

Several techniques are presented separately throughout this article. In practice, they tend to interact with each other, and when mixing it is quite possible that you'll go through each of them several times, making finer and finer adjustments until the ultimate mix has been achieved.

Sound enhancement

EQ can be used in a creative way to enhance a sound by bringing out and emphasising some of its natural character. Most musically-useful sounds can be described as containing the following four basic frequency components: subharmonics, fundamental notes, upper harmonics and high harmonics (see spectrum analysis graphs on pages 20 and 21). Generally speaking, when using EQ for general sound enhancement, you are normally staying well away from the fundamental note range where the instrument's notes actually lie. This range is usually quite narrow and low anyway: for example the 'fundamental' part of the A above middle C is only 440Hz.

What we are talking about here is boosting or cutting frequencies in the other three bands to produce the sort of generalised effects that are usually described by vague emotive language. For example, adjusting the subharmonics can make a sound warmer or colder. A sound can be made to seem harsher or softer without affecting its volume level by adjusting its upper harmonics, while the high harmonics can affect the amount of sparkle, dazzle, sheen or air in a sound.

Most of the interesting low and high harmonics that can be excited by careful EQ'ing are usually either much higher than the highest note the instrument plays, or lower than the lowest. But tweaking them rarely results in the instrument leaping out of the mix in its high or low registers – the effect is more subtle. If problems do occur, with the instrument seemingly getting louder as it approaches high or low notes, this can be corrected, without compromising the overall effect, with a bit of judicious 'counter-EQ' using a narrow bandwidth on the edges of the fundamental note range.

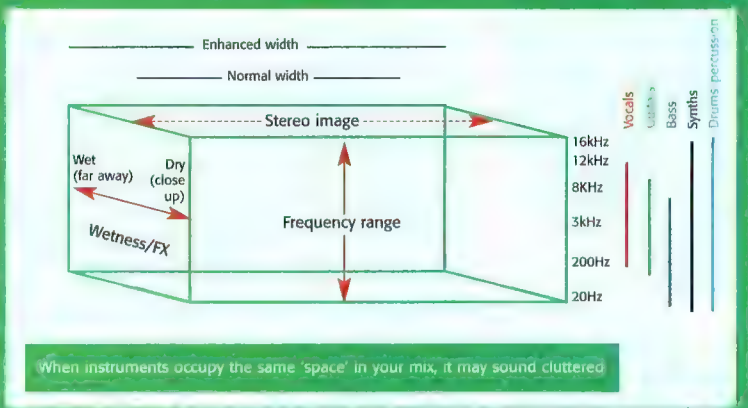
Sonic microscope

Before you go about equalising the sound in this way, it is always worthwhile to begin by using the EQ as a kind of 'sonic microscope' to carefully examine the sound and hear just what is present in each frequency range. To do this, use a medium bandwidth EQ set to a moderate amount of gain and sweep through the entire frequency band, listening carefully to what you find. Also, sweep through the entire band with a medium amount of cut as well, and listen to how that changes the sound. At this point, you're not using the EQ as a tool to change the sound at all – you are just exploring what you've got to work with.

This kind of sonic exploration of instruments is, unfortunately, much harder to do using a 'soft' (screen-based) control interface than it is when using real knobs on a traditional physical console control surface.

Picture this

Imagine placing the various elements of your mix inside a three-dimensional box. The height represents the frequency range, and the width represents the stereo image (or left and right panning), while the depth is dependent on the amount of effects and level you add (or how wet or loud the sound is – the wetter the sound, the further away it becomes). All these factors need to be considered during [illegible] allowing a simple guitar lick to be heard can involve a small pan to the left or right, as there are usually lots of things fighting for space in the centre. Bass sounds are usually the exception, as these should usually be left dry and in the centre: as bass is omni-directional, panning adds no benefit (and is certainly frowned upon by cutting engineers when pressing vinyl!). The diagram on the right is not the whole picture, of course, as all of the above factors of placement are affected by level (or gain), which controls which instrument sits 'on top'. Of course, the above can be disregarded if you're mixing in 5.1 surround – that's a whole different ball game



When instruments occupy the same 'space' in your mix, it may sound cluttered

Frequency ranges: a few pointers

50Hz
This is the super low-end range that can make your internal organs dance around when you're in a club with a good sub bass system cranked up - we love it! Use it to beef up bass drums. Get rid of anything around here on vocal tracks (often the sound of 'pops').

70 to 100Hz
This is nice added to basslines and bass drums for that sub sound so essential in dub records. Again, this is a rolloff frequency for vocals. Note: many sources of sub bass end up cancelling each other out, as bass frequencies are very susceptible to phase problems. For example, if your bass drum disappears now and again in the mix, it's because something else is hitting exactly the same frequency. In other words, adding more bass to things can often lead to a bass loss in your mix.

200 to 400Hz
Use to either remove or add that 'woody' effect to/from a snare, or to either warm up or remove that muddy sound from vocals. Boost here to fill out guitars, cut to thin out hi-percussion parts or cymbals.

400 to 800Hz
Use these frequencies to adjust the clarity of the bass tone or warm up that 'box' sound of toms. Again, boost or cut here to thicken/thin out guitars. Reducing some of these frequencies can help tighten up the overall bass sound of a mix.

800 to 1kHz
I use this for vocal thickening of a different nature to the low-end stuff mentioned earlier. Boosting at 1K can add to the 'knocky' sound of bass drums, especially useful in dance music.

1 to 3kHz
Okay, now we're getting into the hard stuff. Boost around 1.5 to 2.5k to add edge to guitars and basslines. Cut some of the upper 2-3k range to help smooth out vocals, especially those vocals that seem to cut your head off when listening at high volume – unless you're one of those sadistic people (like Adrian Sherwood!) that like that. Boosting here can also add edge to pianos and vocals. This is a 'hard' range that is not pleasant-sounding, but it can help instruments stand out in the mix.

3 to 6kHz
Boost some of these frequencies for the ideal 'plucky finger' bass sound; cut at the 3k range for less of that hard sound on vocals. To soften sounds (not everything should be bright) cut the upper range to dull off certain parts. Boosting at 6k can be a good upper point for adding clarity to vocals, and nice for distorted guitars.

6 to 10kHz
Boost here for sweetening vocals. As you go up in frequency, you add more air, getting that breathy sound. Boosting around here will add crispness to acoustic guitars (but be careful not to overdo it). Percussion and cymbals all benefit from boosting some of these frequencies: boost for the ring of a snare and the top edge of a bass drum (yep, a bass drum), and to add edge to synth sounds and strings.

10 to 16kHz
Boost here for even more of that breathy sound on vocals, and to add that extra zing to cymbals and percussion. Cut here to reduce noise on sounds that aren't bright. Boost for more sparkle on pad sounds and the like, but only if the frequencies are there: more often than not you'll just be adding noise!

A final note
Some engineers claim it is better to cut then to boost when using EQ, but personally, on the hundreds of records I have mixed, I have never really followed this theory. At the end of the day, you do what you think sounds right to make the mix work – when working on Nine Inch Nails tracks, for example, I'm hardly gonna think 'I better not be too outrageous with the EQ!'. Sometimes, you might be better off using processors that brighten sounds, as some EQ units can make things sound hard and brittle when adding top end. Keep everything organised on your desk or in your computer so nothing is adding to the mix that shouldn't be, and keep the levels as high as possible without clipping. And above all, have fun!
• *Alan Branch*

The golden rule: do whatever you think sounds right to make the mix work

James Cheadle

If you are using a computer-based recording and editing package, you may find it much quicker and more intuitive to use some kind of tactile MIDI controller (like Kenton's Control Freak, GMEDIA's Phat Boy or Peavey's PC1600 X) rather than a mouse to control the EQ.

With this method of exploring your sounds, it is possible to locate the main sonic component that characterises any particular instrument. You should be able to determine where the interesting harmonics are, and thus find yourself better-equipped to decide whether you need to boost them, cut them, or perhaps even leave the sound alone completely.

In some instances, using the EQ as a listening tool in this manner could lead you to decide that the sound might benefit from something other than EQ. For example, you might discover that an instrument (say, a guitar) potentially has a lot of attack that isn't immediately apparent in the un-EQ'd version. To bring out that attack, you may decide to use some compression with a slow attack setting to accentuate the 'front end' of the guitar, rather than use EQ, which might result in an artificial sound if overdone.

When using EQ, there is always a danger of overdoing it – to the inexperienced, the way that a freshly-applied EQ can lift the component that

Tips of the trade: vocals

■ Harsh irritating edge due to the inherent characteristics of a particular voice (or a nasty-sounding mic) can usually be cured with a narrow bandwidth cut somewhere in the 2.5kHz to 4kHz range. A gentle shelving boost somewhere above 6kHz can open up the sound, and there will be little useful in the real bottom end, so use a high-pass filter to roll off anything below 60Hz.

■ To add brightness to vocals without making them sound harsh, try a little gain at around 6k upwards with a nice wide band, and sweep the frequency range until you like what you hear. Then, for a smoother sound, take out some mid range by removing a small band (Q) around the 1-2kHz range. To boost the bass, try a narrow Q somewhere from the low mids right down to 200Hz – the exact spot will be dependent on the source sound.

■ For that radio effect on vocals, roll off a little top and lot of bottom, then add a lot of gain in the mids – around 9dB of 1.5k. Then, for some added extra 'phone' quality, compress very hard. Any extra generated noise generated is usually nice – try turning up the line gain to overload the desk channel.

■ Remember that EQ is not just for the source sound, but also for any effects it is sent to. A nice vocal delay spin can be created by sending the vocal to another channel that is 'floated' from the mix (not in the mix). Feed in the radio effect described above, then send it to a delay unit. You will get a nice thinned-out delay effect for smooth-sounding vocals.

Gavin Roberts

» characterises a particular instrument can seem quite exciting. So as a rule, for instruments that are playing independent musical parts, try to accentuate the voice of each instrument only so it retains its own place in the mix, while still being sufficiently big to fill that space. Don't over-characterise an instrument unless you intend to place it far back in the mix and you're already finding that it becomes indistinct at the required volume.

Distance placement

It's a common-enough analogy to liken a mix to a painting. The left-to-right perspective is created by panning the instruments, but what of the front-to-back perspective? Which elements of the sound are in the foreground and which are perceived as being further back is dependent on a number of interrelated factors, one of which is EQ.

Positioning and distance in the mix can be created with the use of reverb and/or delay, but used by themselves, these effects only go part of the way towards creating a natural sense of depth, and can sometimes result in a messy sound. Combine them with judicious use of EQ, however, and the possibilities are greatly increased.

EQ techniques for creating distance are based on the way that sound disperses in nature and the way the human ear works. As sound travels through air, its frequencies are absorbed over distance – especially the high frequencies, which decay much quicker than the lower ones, so nearer sounds will tend to have a higher treble content than distant ones. For bass frequencies, there is the proximity effect to contend with. This is the phenomenon exhibited by most directional microphones, whereby the lower frequencies tend to be over-emphasised when a sound source is very close to a mic (get a vocalist to sing directly into your ear and the same thing occurs).

These phenomena can be exploited when mixing by either boosting or cutting the high and low EQ controls on your mixing desk. Of the two, it is probably cutting that is the most useful tool when mixing. By rolling off some bass and top end, you can push a sound back into the mix and make it sound further away. This is very effective when used in conjunction with reverb.

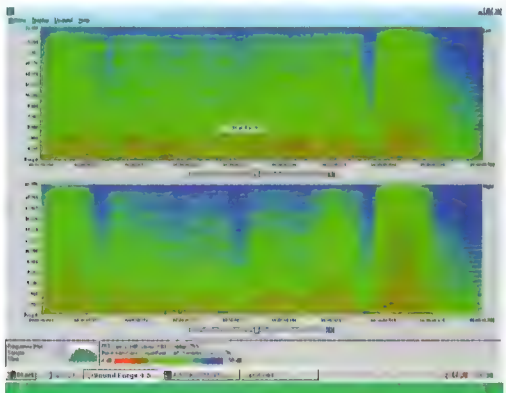
The opposite effect – bringing instruments, and especially vocals, forward – can be achieved by boosting their high and low frequencies to make them sound closer than they really are. It's important not to go too OTT with the boosts, however, as this could lead to mixes that sound a little too 'hi-fi' and perhaps lacking in mid-range energy and excitement.

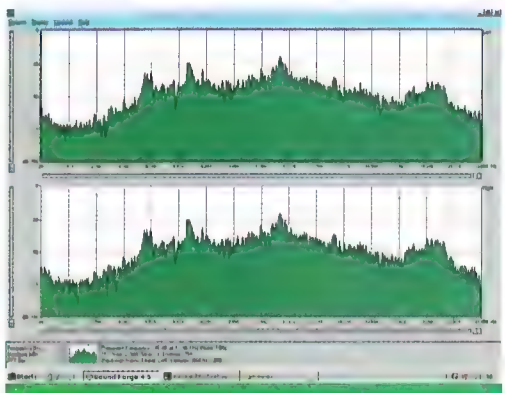
To create a 'big' mix, you may be tempted to make each part or instrument sound big in its own right, but big only seems big when other things seem small. It is the light and shade, the contrast of one part against another, that can make a mix something special. Some instruments may be left to sound natural, some, such as vocals, can be brought forward with a little top and bottom-end boost, and some can be thinned out with cuts to sit them further back.

Use this technique hand-in-hand with some appropriate reverb (and of course the relative volume levels of sounds) and you can put the illusion of distance into your mix, making it sound significantly larger overall.

Creating room in the mix

Let's consider that you have recorded an arrangement with loads of instruments all playing parts that fit together well, but with all the faders up, the mix still sounds a little cluttered, perhaps with some instruments masking or obscuring others. How do you create a little more room in the mix for each instrument to breathe and be heard, without resorting to the kind of serious editing that involves cutting out


'Musical' sounds contain four basic frequency components subharmonics, fundamentals, and upper and high harmonics


Boosting or cutting frequencies other than the fundamental can make sounds warmer or colder, or add sparkle, sheen or air

or muting some of the instruments?

With creative use of EQ, you can carve out some room, pushing some instruments out of the way to make space for others. This method was frequently utilised at Tamla Motown, usually to allow vocals to come through clearly. The idea is to use subtractive EQ to remove frequencies from certain instruments that may be clashing with other sounds in the mix. This can take the form of EQ'ing individual instruments, or alternatively, a set of instruments can be subgrouped and EQ'd collectively.

This technique could be viewed as being somewhat brutal, but there will be elements in some instruments' sounds that serve no purpose other than to muddy up a mix, even though they may be a constituent part of the normal sound of the instrument. The boom of an acoustic guitar, for instance, can add unnecessary clutter in the frequency range where the bass and kick drum should be.

Indeed, if you were to use a large amount of subtractive EQ on a particular instrument and then listen to that instrument solo'd, it might sound particularly horrible, as if some of its character had been taken away. However, that is largely irrelevant, as once in a mix, any instrument is a constituent part of that mix and should be listened to in that context. Something that might sound quite nasty when solo'd could sound great in the mix. In the case of the acoustic guitar, for example, we may only want to hear its top end anyway.

If instruments are jumping out of your mix, you could solve the problem using automated faders. However, careful EQ'ing can give better sonic results

The 'mix room' technique may appear brutal, but something that sounds nasty when solo'd could sound great in the mix

For instruments that are playing the same musical part together, the opposite might apply. It is often a mistake to make them sound independent; instead, try to make them combine into one single, bigger sound – even if the instruments used are quite different. Separating them can, in any case, be difficult, as the ear will subconsciously try to merge them, so there's little point using EQ to make the two parts distinct when, from a musical perspective, they are not.

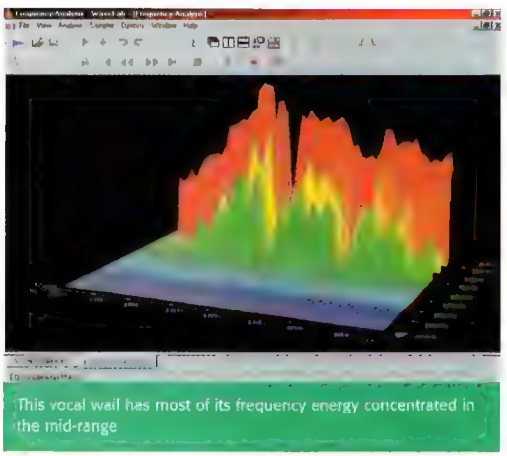
For example, think of George Benson's distinctive scat vocals that accompany some of his guitar solos, and how the vocal and guitar blend together to form a bizarre new guitar sound. Similarly, mixing synth sounds with live strings can be much more effective if you try and combine them to create a new type of unusual string sound, rather than leaving it sounding like a silly little synth playing over a massive orchestra.

Auto mix levelling

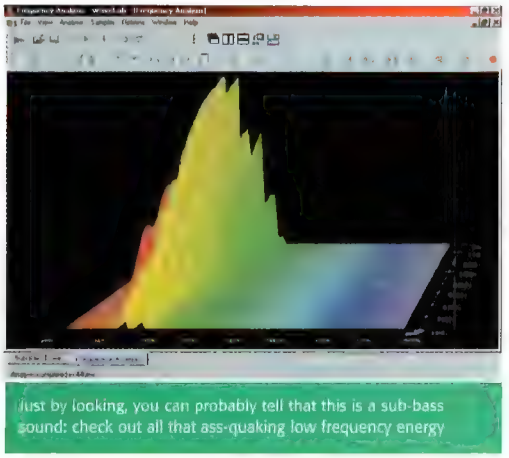
When mixing, on some instruments, certain notes will jump out at specific times and be over-prominent, or alternatively may seem subdued and almost disappear. One way to overcome this is by adjusting the level of the sound every time that the offending frequency occurs. Automated faders could sort this out, but it's not everybody that has automated faders, and for those that do, it could take hours to get all the right levels programmed in at exactly the right places.

The other solution is to use EQ, which can produce better sonic results, and has the advantage of being much quicker to set up. What we are talking about is playing with the EQ at very specific points in the middle of the instrument's melodic range, which could cover a series of notes or even a single note.

As a starting point, use your ears to track down



This vocal wail has most of its frequency energy concentrated in the mid-range



Just by looking, you can probably tell that this is a sub-bass sound: check out all that ass-quaking low frequency energy

Tips of the trade

- Muddy sound is a major problem that can benefit from an EQ cut. Muddiness can occur in many instruments, but is particularly noticeable with kick drums and acoustic guitars. Try cutting somewhere in the region of 300Hz (although anywhere from 100Hz to 800Hz could be appropriate) to thin out the sound, but be careful not to lose too much of the sound's 'body' that is present in the same frequency band.
- With a hi-hat, rolling off all the bottom end (say, below 600Hz) will help clarity, while a top-end boost at around 10kHz will add a bit of sizzle. 'Clangy' frequencies will probably be in the upper mids – try a cut between 1kHz and 4kHz.
- If vocals and guitar are clashing, try subtractive EQ, cutting the guitar between 1kHz and 5kHz to let the vocal through. Then, to compensate for its loss of mids (and so you can hear it without masking the vocal) boost the guitar in the bottom end somewhere between 100Hz and 250Hz and in the top at around 10kHz and 12kHz.
- Add some extra sparkle to an acoustic guitar by adding a little 10kHz boost.
- A kick drum may need to lose some flab around 300Hz, but might also benefit from some low-end boost between 40Hz and 80Hz. Try a boost around 4kHz to 6kHz for more attack, or roll it off if you want less.

Digital and analogue EQ

the source of the problem, by finding the frequency that causes the instrument to jump out or disappear. Usually, this will occur in the same sections of the song, where the same region of the instrument's note range is played. Using the 'sonic microscope' technique (described earlier) of boosting and sweeping the range, the specific frequency range where the problem occurs can be found.

Once you've identified the offending frequency, there are two ways to deal with it: by using EQ by itself, or by using EQ in combination with compression. Using EQ with a fairly narrow bandwidth, the frequencies in the problem area can be cut (or boosted, if the problem is one of the instrument disappearing) in that specific part of the song to get the balance right. Now, this means that those frequencies will be cut (or boosted) throughout the song, but often in these circumstances, the EQ tweak will actually work throughout the song as if the instrument has sorted itself out. Carefully check the levels in the rest of the song to make sure.

Redferns

The other way to solve this problem is to use frequency-conscious compression, so that whenever the offending frequencies occur, the compressor kicks in and pulls down the gain. To use this technique, you need a compressor with external access to its sidechain. Feed the instrument sound through the compressor as normal, but connect an EQ unit (preferably a graphic) into the sidechain. The idea is to boost the offending frequency range on the EQ, which will make the compressor more sensitive to those frequencies and compress harder when it 'hears' them. The setting of the compressor's release control is crucial here – set it so the compression stops and the sound reverts back to its previous level as soon as the offending section or note finishes.

Gelling the mix

So far, we have been discussing EQ in terms of individual sounds in the mix. But even if you've got to the point where all the individual sounds have their place in the mix and can be heard without being over-prominent, you may not yet have a great mix. You need to consider the overall impact of the mix as a whole, and look at specific areas of sound/frequency ranges or specific groupings of instruments. To this

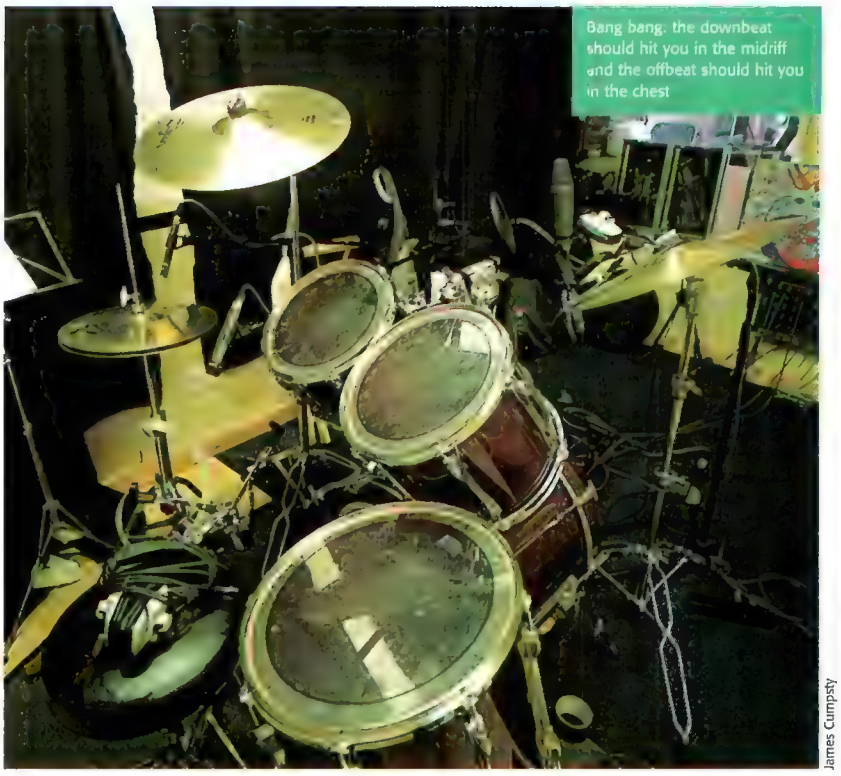
end, let's concentrate on two very important aspects: the rhythmic pulse and the top end.

With so much music being heavily rhythm-orientated, arguably the most critical aspect of a track is the pulse of the rhythm. This gives a track a lot of its energy, and EQ can be used to emphasise it. This does not have to mean a bass-heavy mix, but the relentless impact of the rhythm must be clearly felt in your body as you listen to the mix.

The primary contributors to the rhythm are obviously the drums and bass, although they are not solely responsible. The rhythm of the other instruments, such as piano and guitars, can play an important part in the overall mix. Unfortunately, there isn't any special formula to get the rhythm happening – it is likely to be different in every song you will record. You just need to be aware that a rhythmic pulse is there, and figure out which sonic components of which instruments are making the important contributions. This does take a fair amount of experimentation.

Rhythm is a product of the downbeat (usually the kick drum) and the offbeat (which is created substantially by the snare). The alternate push/pull of a song is the defining essence of its rhythm, and if you can get this across clearly, then people will get up onto the dance floor, or at least start tapping their feet when the record is played.

As a starting point for mainstream pop, the downbeat in a song should genuinely feel (at loud volume) like it physically hits you in the midriff or below, while the offbeat should hit you in the chest or higher. Of course, this varies with the style of music: in reggae, the downbeat is almost subsonic in nature, and in drum'n'bass, the offbeat is almost non-existent; with the snare being little more than a splattering percussive effect.



Bang bang: the downbeat should hit you in the midriff and the offbeat should hit you in the chest

James Cumpsty

Instruments and vocals can be brought forward by boosting their high and low frequencies to make them sound closer

In many cases though, the offbeat is just as important as the downbeat, and other instruments can contribute significantly to the effect – look for syncopated beats that deserve accentuating in order to work with the snare. Rhythm guitars are prime contenders, especially in reggae music.

Take it to the top

The top end of a final mix always needs a great deal of careful attention. A subdued top end can sound unengaging and amateurish, while a good top end can make a track sound professionally polished and really shout 'Quality Production'. So what are the top end elements we should be looking at?

First off, cymbals add a certain amount of sizzle, and percussion instruments like shakers and tambourines can contribute in a similar area. Other contributors to the top end include vocals – not just the lead but also the backing – and don't forget the vocal reverb. Acoustic guitars are also up there, and can add a nice silky sheen that that can be heard over the top of the mix, even on the crappiest of transistor radios.

So the top end of a mix does warrant special consideration, but it has to be approached carefully, as it is easy to over-egg the pudding. Overdo the top end while monitoring at reasonably loud levels and your ears will grow tired very quickly and become somewhat immune to treble frequencies, causing you to pile on yet more top end to compensate – a vicious circle. It is not at all uncommon to listen to what sounded like a wonderfully-balanced mix the night before and discover, in the cold light of day, that it sounds dreadfully tinny. A visual check of the desk will probably reveal that all the HF controls have been cranked up. The solution? Reduce the amount of HF that you gave each individual channel previously, or EQ the mix as a whole using a high-quality stereo EQ.

And finally

EQ is one of the most fundamental tools used in the entire recording process, and is probably the most versatile piece of equipment to be found in any studio. Hopefully, as you've worked your way through this two-part article, you'll have seen how EQ is not just a device for playing with the sound and changing it into something that wasn't there in the first place. Of course, many producers use it this way, but don't forget the original applications for which the device was invented: removing unwanted background sounds and leakage from other instruments, correcting for mic placement and pickup pattern and, as seen in this instalment, a creative tool at mixdown.

The techniques listed here should be regarded as food for thought to be considered when starting your mix, but there are no set rules, so don't forget to experiment. Combining some of these techniques with the use of compression, panning, effects and level should see you well on the way to some happening mixes. Happy polishing!

Tips of the trade

- Here's a quirky one: to lose that digital sheen and achieve a more 'vintage' sound, cut everything above 12kHz
- With bass sounds, it's often tempting to give a fair boost in the 50 to 150Hz range for extra welly, but these sounds often contain higher frequency harmonics in the mid range. Boosting slightly in this range can add edge and presence to bass
- Compression can affect EQ depending on where it is placed in the signal path, so experiment with placing the compressor before and after the EQ. As a general guide, compress first, but if (for example) you are pumping up 90 to 100Hz on a live bass, it might be better to place the compressor after the EQ so it will take care of any large peaks
- Cutting the mid range of a sound can give the impression that it's louder, even when it's quite quiet compared to other elements of the mix. This can be used to good effect on the rhythm section while vocals and other instruments sit on the top

SPL Stereo Q

Stereo EQ unit

Price £598

For Single set of controls makes setting up easy › Versatile parametric bands › Sub and Air bands provide instant top and bottom control

Against Those bloody knobs › 3D enhancer needs careful use

Verdict An intuitive and very capable stereo EQ unit

Anyone looking in the SPL product brochure or at their web pages would see that the German company now produces a large product line of signal processors. Some of these are reasonably conventional, and some commit all manner of psychoacoustic jiggery-pokery to a signal.

The Stereo Q falls into the 'reasonably conventional' category, although it does have a stereo width enhancer slotted in alongside the more traditional 5-band parametric EQ. SPL describe it as "The first stereo EQ in its class for project studios, keyboardists and guitarists to process stereo signals directly," and at below £600 it's certainly not out of the price range of that target group.

The Stereo Q does exactly what it says on the tin. It's an EQ unit for processing stereo signals, but it only has a single set of controls – an approach that, apart from saving time, has an advantage if true stereo processing is needed. Other stereo EQs featuring two sets of controls can be difficult to set up in a balanced fashion when faced with a true stereo signal – matching one side's knob positions to the other can be a hit-and-miss affair.

The Stereo Q has no such vices. The downside, however, is that you can only process two separate mono sources as long as they need exactly the same EQ.

Overview

At first glance, the Stereo Q's front panel looks compact and businesslike, with large amounts of accurate white legending standing out clearly against the Jackson Pollock-style black and splattered blue panel. But that's of little use if you can't accurately recall previous settings.

The fact is that all the knobs have a white line on their cap, which – only in some cases – coincides with an indentation that runs along the body of the knob all the way to the front panel legending. Now, in an ideal situation the white line would be extended all the way down the barrel of the knob to the front panel to make recall of settings so much easier, and why all manufacturers do not provide this simple ergonomic aid is a bit of a mystery. How much more does it cost for slightly better knobs?

In SPL's case they haven't even managed to make the white line coincide with the indentation, which would have helped considerably. Now if this sounds like the nit-picking ramblings of a sad and embittered old fool, that's exactly what it is, but it's the attention to that sort of detail that makes an engineer's job that little bit easier and raises standards in equipment. What's more, this is the last ever issue of *The Mix*, so we're allowed to rant and throw tantrums.

Er… moving on. Looking at the front panel in detail, the Active switch, situated at the extreme left, illuminates in a fetching shade of blue when engaged, and switches the electronics into the signal path via a crackle-free relay, allowing instant comparison between the processed and unprocessed sounds.

A hard bypass, which still operates when the unit is powered down, is used to connect the signal directly from the inputs to the outputs when processing is not required.

The front panel is divided into six distinct areas covering different aspects of the sound, which amounts to five different and adjustable frequency bands (working from the lowest in the left to the highest in the right) tailed by a 3D width enhancer.

The first band is the Sub band: a sub-bass filter featuring a passive network comprised of a capacitor, resistor and coil. This is controlled by a single knob, providing up to 14dB of shelving cut or boost, covering the bottom end up to 200Hz.

SPL have used the coil in the circuitry for its acoustic properties and claim that it produces a more pleasant harmonic spectrum with more precise and rounder-sounding bass tones.

Low frequencies in the range 10Hz to 250Hz are covered by the next (Low) section of the Stereo Q, which features three control knobs of different sizes. The largest knob sets the frequency, while the smallest selects the bandwidth, or Q factor, which can be varied from 0.5 to 5.

In terms of octaves, the narrowest bandwidth (Q factor set at 5) relates to about 0.2 octaves while the

specifications

Connections
Balanced XLR, 1/4" jack

EQ bands
Sub: 14dB cut/boost @ 10Hz to 200Hz
Low: 15dB cut/boost @ 10Hz to 250Hz
Mid: 15dB cut/boost @ 140Hz to 3.5kHz
High: 15dB cut/boost @ 940Hz to 24kHz
Air: 9dB cut/boost @ 17.5kHz

Additional features
3D enhancer

Nominal input level
+6dB

Max. input level
+20dBu

Max. output level
+20dBu

Dimensions
482 x 44 x 237 mm

Weight
3.4kg

words **Trevor Curwen** images **Katharine Lane-Sims**

SPL's Stereo Q: set to become a flexible friend for many recording engineers

greatest bandwidth (Q of 0.5) approximates to two octaves. SPL operate the proportional Q principal, which they claim sounds more musical.

The maximum possible boost or cut is dependent on the selected bandwidth, so if the bandwidth is increased, the amount of boost or cut decreases automatically with the setting of the Cut/Boost control. Thus, a large bandwidth is automatically treated more gently than a narrow one. The actual cut and boost is taken care of by the third knob, and up to 15dB either way is available.

The next two control sections, Mid and High, are identical to the Low section in terms of their cut/boost and bandwidth knobs and the values they provide. The Mid filter covers a frequency range of 140Hz to 3.5kHz, neatly overlapping the range of the Low filter, while the High filter spans the frequency range from 940Hz all the way up to 24kHz.

Like its counterpart at the other end of the frequency spectrum, the single-knob Air filter comprises a passive network of capacitor, resistor and a coil, which SPL have chosen in preference to a simple condenser resistor filter stage.

The claim for the coil in this instance is that it provides softer sound characteristics and will give processed signals a vastly-improved presence. The filter actually has a bell characteristic, with a centre frequency of 17.5kHz with a maximum cut or boost at that frequency of 9dB.

The final element of control that the Stereo Q has to offer is a 3D-Enhancer, controlled by a single knob graduated from 1 to 19. This enhancer's function is to widen the stereo picture, which it duly does, by identifying the signal components that are placed left and right in the stereo image and mixing them inverted to their respective opposite side.

Connections to the unit are via balanced XLRs and 1/4" jacks, and, in order to keep the signal quality as high as possible, SPL have opted to eschew input and output level controls, processing all signals in a ratio of 1:1 with a working level of 0dBu.

In use

The Stereo Q seemed to offer an ideal solution for remastering some old mixes that had an odd tonal balance, possibly due to the work being done on less than adequate monitors in the first instance.

Whatever the case, the mixes seemed to be a little lacking in top end and suffering from an excess of midrange frequencies that made them sound edgy, harsh and just a bit hard to listen to for extended periods.

Trying to fix these mixes gave the Stereo Q its first test run, and it did the job proficiently. In the event, using the Stereo Q's Mid band to implement a broadish cut centred around 850Hz subdued the midrange sufficiently to make all the difference. Following this with a slight boost around the 10kHz mark and a few dB boost on the Air band added the polish that was missing from the top end. »

Alternatives

While there are a shed-load of inexpensive stereo compressors available, stereo EQ units in the same price range are a bit thin on the ground. In the last three years, *The Mix* has only looked at three such units, all of which are still available. Each has a different approach to its intended task.

The JoeMeek VC5 Meequalizer (*The Mix* 51) is the most straightforward of the bunch. This 2-channel unit features shelving bass and treble controls at 100Hz and 8kHz, respectively, and a swept Mid from 600Hz to 3.5kHz with a Q that is not user-adjustable, but increases with frequency.

This is more of a character EQ rather than something that's designed to be used with surgical precision, but its appeal lies both in its simplicity of operation and its sound, which in the previous *The Mix* review was described as like spreading butter on toast — always tasting good whether laid on thick or thin.

The Symetrix 552E (*The Mix* 52) is quite unusual in that it features five identical fully-parametric EQ bands per channel, plus rotary high and low-pass filters. Each of the five identical bands can cover the whole of the frequency spectrum by virtue of its own 3-way switch, which can select a frequency range of 10Hz to 200Hz, 100Hz to 2kHz or 1kHZ to 20kHz. The flexibility on offer makes this a very powerful machine.

TL Audio's 5013 (*The Mix* 47) is fitted with valves and features four bands of parametric control per channel. Frequency ranges are 30Hz to1kHz, 100Hz to 3kHz, 1kHz to 12kHz and 3kHz to 20kHz. *The Mix* review found the sound to be, "clean and crisp with a lot of detail, the bottom end, obviously enhanced by the valves, gives a very good warmth which is still tight and not too rounded."

Finally, don't forget to check out this issue's review of the Trident MTA Signature series.

Trying out the various knob positions is so much easier with the Stereo Q than is the case with a 2-channel unit with separate sets of knobs where both hands are tied up with the same task, not to mention the effort and concentration expended trying to turn both sets of knobs to exactly the same position.

The 3D-Enhancer was also tried out in this session and created an impressive perceived increase in stereo spread. Extreme settings, however, can leave a hole in the middle of the stereo picture, and mono signals can be weakened.

In fact, SPL recommend sticking to a range of values between 6 and 14 on the scale. A process that messes with phase relationships in this way should always be approached with caution, with constant checks on mono compatibility to see that everything is kosher, but, with controlled use, 3D enhancers can be very useful tools.

Whereas the EQ used on the whole mix was necessarily broad and low key, the Stereo Q was used next on some stereo synth patches. Its capabilities were also given full rein on some sampled stereo drum loops, and it's here that the unit really shows its worth with some quite radical reshaping of various loops to alternatively bring out or subdue the different elements of the loop to suit the track.

Both the Sub and Air band proved to be very useful in the general role of adding weight and shimmer, respectively, but the three parametric bands provided the real 'surgical' EQ power when undertaking tasks such as removing the boxiness from a snare and putting some sizzle into it, or feeding a little more punch into a kick drum.

SPL's proportional Q, as mentioned earlier, works fine in its intended role of keeping things from sounding unnatural. When using the broader values, the EQ of the sounds changed without any excessive increase in their perceived loudness, yet it's possible to undertake vicious narrow band adjustments where needed.

The crossover between the various frequency bands allows quite detailed work to be carried out, utilising two of the bands in the same frequency area.

Although designated as a Stereo unit, the Stereo Q is equally at home working on mono sounds, as long as you don't mind it working at half its potential. There's a lot of potential available in using the Sub band and the adjacent Low band in conjunction – likewise, the Air band with the High band.

A synth bass sound, for example, was given a real fat bottom end with a boost on the Sub band, while the Low band was used to zero in on a frequency to give it definition. Similarly, at the other end of the spectrum, the High band was used with a narrow band cut at around 2.8kHz to take a bit of nasal nastiness out of a solo voice, while the Air band was used to give it a silky sheen.

Overall, the Stereo Q presents an opportunity to carry out both generalised and more specific tone-shaping with little effort.

Verdict

There seems to be an increasing amount of stereo equipment about – from keyboards and samplers through to effects processors and the latest generation of guitar preamps, all of which could often benefit from a bit of overall EQ either during the actual recording process or at mixdown.

Also at mixdown, a situation often arises where a stereo subgroup of instruments needs a frequency boost to give it more presence, or a little subtractive EQ to let the mix breathe. And, of course, the final stereo mix may need a tweak. Clearly, there is a need for decent stereo EQ processors, and the SPL Stereo Q is one unit that can fulfil that need.

The combination of five separate EQ bands creates tremendous sound-shaping possibilities, but what really sets this unit apart is the single set of controls, making the implementation of those possibilities a painless task. What can we say? Creative EQ with a human touch at a reasonable price. There, we said it.

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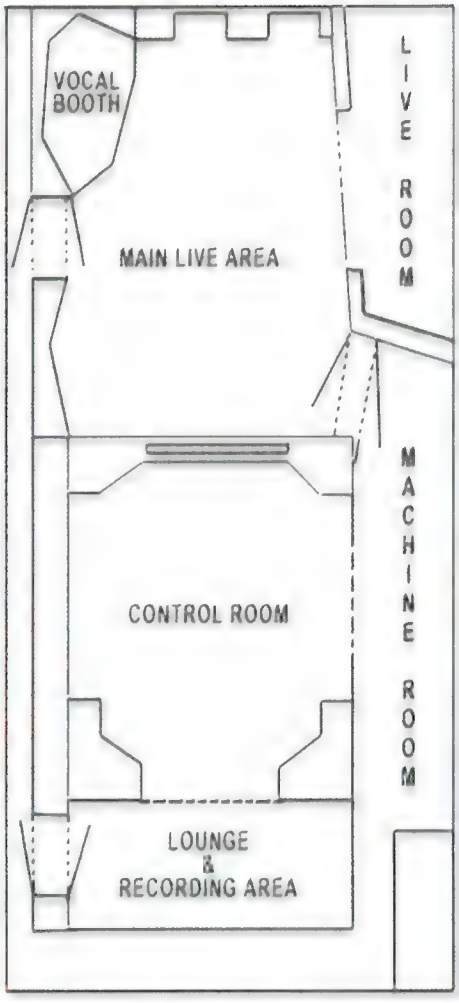

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CreamWare PowerSampler

DSP-based sampling system for Mac and PC

Price PowerSampler £449, CR-Breakout box £425
For Sound quality › Ease of use › Familiar Akai-style interface › Excellent PDF help files
Against EASI not working properly with Logic 4.5 or higher › Auto start-default setting
Verdict A fully-featured sampler/soundcard with FX, MIDI and powered by its own DSP for under £500 – a bargain!

Over the past few months, many of you may have noticed ubiquitous CreamWare ads highlighting several new additions to their ever-growing family of DSP-based audio hardware. The device, in this case, is called PowerSampler.

Combining a desktop computer's RAM with the PowerSampler's onboard processing power transforms said computer into a fully fledged 24/32-bit, 96kHz-supporting, 32-voice stereo sampler. That this all resides within the computer is, of course, an added bonus, with all the benefits of large-screen editing to boot – something a hardware sampler's clearly got to go some to beat.

Soft-samplers have been around for a while, but now, as a spin-off from CreamWare's Pulsar/Scope series of cards, the PowerSampler has been created. It can be used either as an add-on for the Pulsar/Scope or on its own, successfully filling a gap in the market for those looking for an alternative sampler – *without* soaking up precious CPU power with a soft-sampler.

Overview

For those not familiar with the CreamWare approach, PowerSampler, like all their products, is basically a DSP-powered PCI soundcard and custom software combination. The main advantage of this is that the onboard processing power alleviates any strain that software normally has on a computer.

In this case, the DSP on the PCI card is handled by three 32-bit SHARC DSPs (SHARC DSPs can process audio significantly faster than a Pentium chip can). The card also contains all the necessary inputs and outputs for communicating with the outside world.

A pair of stereo 1/4" jacks handles the analogue I/O. On the output front this is handy, as the insert type of leads required for this are easily available. The MIDI I/O are on a PS2-style socket that comes with a pair of adapter leads. A mini stereo jack socket also handles the digital I/O. Like the mini MIDI sockets, here the idea is to keep everything within the small amount of space available on the rear edge of the card. There's also a FireWire-style S-link socket for connecting to CreamWare's optional ADAT and analogue output expanders. An STDM internal connection is provided for connection to other CreamWare cards.

The card itself is unassuming in size, and installation is as straightforward as it gets. Once the card is safely installed, it's time to install the drivers, including all the necessary EASI, ASIO, MME, DirectSound, GigaSampler and OMS drivers for use in combination with your existing audio applications. These come on one of two CDs and are simply a matter of following the clear-cut instructions found within the supplied *Quick Start* guide booklet.

Installation of the PowerSampler program itself is again simply a case of following instructions. It's worth pointing out, however, that during installation there's a very discrete option provided, enabling PowerSampler to start automatically every time you boot up your computer. This option is enabled by default, is easily overlooked, and can only be disabled by re-installing the software.

Also installed at this stage are two online PDF instruction manuals. These in themselves are excellent, and CreamWare should be congratulated on their clear layout and ease of navigation.

In use

Immediately noticeable when running PowerSampler is the relatively small Toolbar, from where most parameters can be accessed. Along the top are two drop-down menus. Firstly, Environment is essential for setting up PowerSampler with whatever audio application you want to use it with, such as Emagic's Logic Audio series or Steinberg's Cubase VST (or as a standalone sampler). Systems, the second drop-down menu, contains the settings for CreamWare's ULLI (Ultra Low Latency) drivers for changing the latency.

system requirements

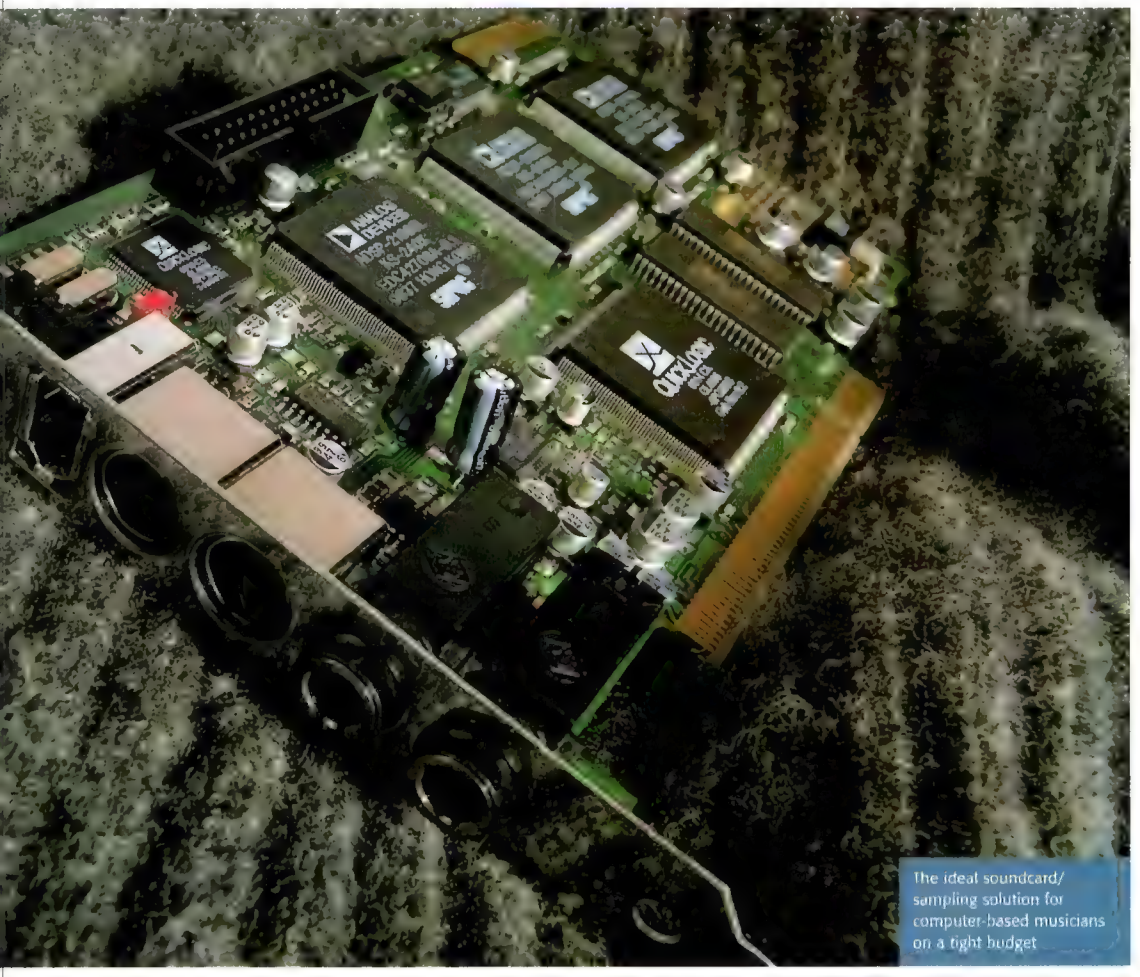
PC (minimum)
- Pentium 166MHz (MMX) or faster
- 64Mb RAM
- Windows 95/98

(recommended)
- Pentium II 300MHz or faster
- 192Mb RAM
- Windows 95/98

Mac (minimum)
- G3
- 128Mb RAM with virtual memory enabled
- Mac OS 8.6 or higher

(recommended)
- G3 at 350MHz
- 256Mb RAM or more

words **Alan Branch** images **Katharine Lane-Sims**



The ideal soundcard/ sampling solution for computer-based musicians on a tight budget

specifications

Sample rates
96, 88.2, 48, 44.1, 32kHz

Number of channels
S-link: 8 I/O (with optional breakout box)
S/PDIF: stereo I/O
Analogue I/O: stereo 1/4" jack (unbalanced)

Output level
-10dBV (nominal)

Maximum output level
0dBV (0dBFs)

MIDI
Mini-DIN 5-pin (I/O)

S/TDM
SCOPE Bus connector, 128 channels, 32-bit

Voices
32

Converters
A-D: 24-bit/96kHz
Dynamic range: 98dB
THD+N: 95dBA (typ)
D-A: 24-bit/128x oversampling

Beneath these are five windows: Program, Keygroup, Sample Editor, Mixer and Browser. Clicking on any of these will open a larger version of these panels for easy access to the various parameters contained within.

The second CD bundled with the package is the 400Mb *Ultimate Sample Collection*, a helpful selection of samples and programs, and certainly a useful place to start checking out the PowerSampler's functions.

It's also worth mentioning here that PowerSampler can read not only Akai programs, but also SoundFont 2, WAV and AIFF files (and, hopefully, in the future, other sample formats, if only for the sample mapping parameters).

Clicking on the toolbar's far left panel will, accordingly, open the main Program window. From then on, it's simply a matter of dragging the selected program from the browser into one of the 16 available program slots. Being somewhat based on the renowned Akai series, it is immediately recognisable to anyone who has used one of those machines.

Each program has selection options for the desired MIDI channel, main volume, pan and poly settings. Clicking on the Additional menu takes you to a page for separating the outputs on PowerSampler's mixer page.

A memory page tells you the percentage of resources each program is using and the total size of each program in RAM, with a Used and Free box to show how much your computer has left to run on. You better think hard before loading in that 1Gb piano! It's a shame that the file browser doesn't show how much RAM each program uses *before* you load it – something for a future update, perhaps?

Beneath the program panel are several more menus that open up extending sub-windows, the first being Program, where most of the main parameters for modifying programs reside – namely Loudness, Filter Modulation, two LFOs, Pitch, MIDI, Tuning and Soft Control.

Next up is Keygroups, also accessed from the toolbar. This is where to map samples into the four sample zones, again much the same as an Akai. If you're starting from scratch, it's simply a matter of right-clicking within this window and selecting New. (Alternatively, selecting one of the two Remove options will remove one or all key groups).

Beneath the main panel of this window and to the centre are three buttons: Edit All, X-Fades and Span to MIDI. To the left of these is Options, which takes you further into the editing process. Here is everything required for adding samples to keygroups, setting the filter parameters and adjusting the envelopes.

Further along the toolbar is the sample editor, where all sampling and sample editing operations are laid out. Features here include a good waveform display, various options for loop finding using a split window, cutting, copying and pasting, plus zoom options. »

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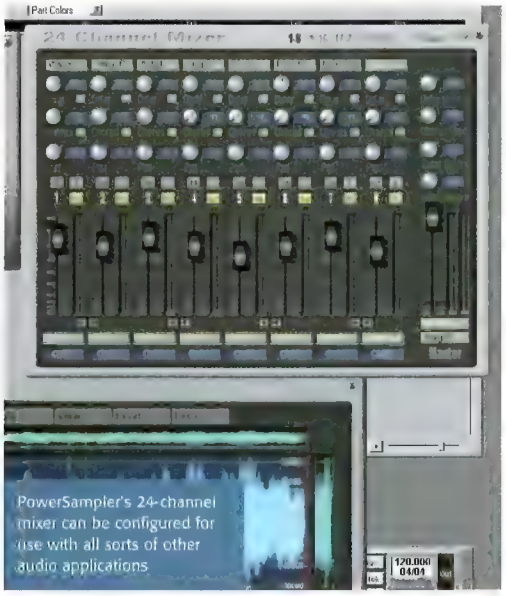
PowerSampler's 24-channel mixer can be configured for use with all sorts of other audio applications

Even top-end hardware samplers can't match PowerSampler's luxurious large-screen editing facilities

The record options are again similar, using either threshold or MIDI trigger, but seeing as this sampler is inside the computer, we guess that not many people will use it, as editing or recording can be done so easily with an external editor like Sound Forge or WaveLab.

A 24-channel mixer allows numerous configurations for use with all sorts of other audio applications. This, for us, elevates this card to the lofty heights of king amongst kings as conflicts between different programs fighting to use the same hardware are now a thing of the past. Simply choose which way you want to use the card and how other Windows applications use its drivers in the Environment settings. This affects which set-up you use for the mixer, but, fortunately, it comes pre-configured, so the patching and routing are all done for you. For example, when using the default setting, you get two channels for the Stereo-Wave driver and two for the inputs. These expand as you change configurations for Multiple Stereo-Wave drivers; the mixer then includes the sampler's six individual outs and a stereo monitor, as well as the inputs.

The mixer graphics are superb, featuring Mute, Solo and Mix float buttons, locking stereo faders, pan control and two effects. A true stereo delay and chorus are also included with their own page of parameters, both of which sound very good indeed. All these options will lose or gain a voice or two depending on how much DSP you are using, but unless you have it loaded to the hilt, PowerSampler handles just fine.

The various routing options and set-ups include ASIO and EASI drivers for Logic, Cubase, Cakewalk and so on. Combining one of these packages with PowerSampler's mixer means you can play samples via their dedicated MIDI drivers within your sequencer and record the audio internally for internal mixdowns.

PowerSampler's performance and ease of use are without compare. In fact, we completed a whole track by the end of our first day using it, which says a lot for most software these days! The sound quality is fantastic, with a rich bottom end, just right for monster drum sounds.

Verdict

Anyone familiar with Akai samplers is immediately going to feel at home with the PowerSampler. Some of the controls are a little fiddly to operate, and the saving of individual programs and whole volumes is a trifle oblique – this area could definitely be made clearer. But for the computer-based musician on a tight budget PowerSampler makes for an ideal option, killing two birds with one stone: soundcard and sampler.

The advantage of DSP-based applications such as this is that the onboard processing power alleviates any additional strain the application would normally have on your computer, much like the farm cards within Pro Tools.

Manufacturers of products like Steinberg's Nuendo, who claim faster processing power will outweigh the cost of DSP, are right to a certain extent, but not if you can't afford to upgrade every six months and you want a 24/32-bit soundcard, sampler, MIDI output and basic effects, all for under £450.

There are some very affordable hardware samplers to be found these days, but none that will integrate with your computer as smoothly as PowerSampler does. Alternatives include the SB Live! card and E-mu's APS, but they don't really come close, as far as this professional-looking package goes.

Rival software samplers certainly can't match the PowerSampler's enviable 1-2ms latency – even hardware samplers would be hard pressed to achieve that – and also lack its dedicated hardware support, as well as its expansive sample library compatibility and loading speed.

If you can afford PowerSampler, you won't find anything better. The high level development from CreamWare and its expansion options certainly make it one of the best buys around.

More from: SCV London, 6-24 Southgate Road, London N1 3JJ Tel: 020 7923 1892
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features

- 24-bit/96kHz support
- 4 x I/O (stereo analogue and stereo S/PDIF)
- Optional 16-channel ADAT interface
- Optional breakout box with 8 analogue I/O (24-bit/96kHz) via S-Link interface
- 3 x 32-bit SHARC DSP
- Super low-latency drivers for ASIO, ASIO 2.0, EASI, MME, DirectSound, OMS, Sound Manager, and GigaSampler
- MIDI interface (In/Out), expandable for more voices by adding a second PowerSampler (via S/TDM Bus Connector)
- Can be used standalone or as an expander for the Pulsar DSP system
- Internal connectors

MTA Signature Series

Parametric and sweep EQ units

Price Signature One £799 Signature Two £799
For Powerful › Musical › Built to last
Against We don't like the knobs
Verdict Tasty, very tasty, and worth being good for... please, Santa, please!

The legendary Trident EQ sound is harnessed inside these MTA rack units

In days gone by, the main challenge for the creative recording engineer was to capture the sound of the performance or artist as near to the intended end result as possible, because of restrictions imposed by the medium: 8 and 16-track analogue recorders, if you had the budget, or straight down to mono in many cases.

In that bygone world, decisions were made early, and, as a result, all the additional overdubs and so on were balanced and EQ'd to what was a finished backing track. So, when the last overdub was finished, it would be, to all intents and purposes, finished.

It is possible to criticise old recordings, and, to some people, maybe our contemporary production values are far superior, but, nevertheless, those old pieces often have a phenomenal presence and character that is missing in a lot of modern recordings. These days, there is an endemic fear of making decisions, and people do tend to expect, in this digital world, to fix and balance everything in the mix.

But in this same digital age, there are some problems, and most of these involve audio leaving the digital environment and returning to it – hence the proliferation of plug-ins. But however much you dress them up in retro-style graphics, plug-ins don't have the power and presence of quality analogue processing. Digital processing is, for the most part, far more effective as a subtractive tool than as an additive tool.

Our ability in recent times to manipulate the performance and the actual structure of our audio parts, as well as our arrangements, is impressive, to say the least. But, as we all slip into this challenging world with its inherent benefits and faults, the need to attain the desired sound *prior* to recording is again becoming a far more attractive way of working for many people.

And with this reappraisal of old working practices and experimentation has come a huge boom in the analogue processing market – virtually every major manufacturer makes a voice channel, or a tube preamp. But the favourites are always the ones from the manufacturers with a legacy dating back to the halcyon days. MTA – Malcolm Toft Associates – has that connection, for Malcolm Toft led the team that built the classic Trident consoles for the legendary Trident Studios. The consoles were revolutionary for the time, and were loved for their simple ergonomics and warm, full EQ.

There are still many old Trident consoles alive today, but few in this country, as they are much-coveted by American studios. Individual Trident EQs are occasionally found, but, on the whole, they are rare, so as you can imagine we were enthusiastic (to say the least) when the MTA Signature Series EQs appeared at *The Mix*.

Overview

Both units are 1U. First up is the Signature One. This is a 4-band, fully parametric EQ, with separate high and low-pass filters and a rather sweet-sounding mic preamp. Bucking the trend for vomit-coloured boxes, the MTAs are a rather tasteful deep aubergine – 'Vegetable Renaissance', or 'Plum Duff Fiasco', perhaps, if on a paint chart!

From left to right we have the mic amp, with a mic/line switch, 48V phantom and phase reversal switches. Next in line are the high and low-pass filters. These have a range of 10Hz to 350Hz, and from 4kHz to 30kHz (for the offended bats amongst you).

Next we have the four parametric filter sections. All have individual bypass switching, offer ±15dB of attenuation and have the following frequency sets: low band from 40Hz to 500Hz, low-mid from 10Hz to 1.5kHz, high-mid from 700Hz to 10kHz and, lastly, high, which is a surprising 1kHz to 15kHz.

This is really going out on a limb, as many manufacturers are setting their high range up in the low 20kHz mark for that 'air' effect. But, to be brutally honest, anything with a gentle slope above 12kHz is going to give you that effect, so it's preferable to be dealing with the realistic rather than the fanciful.

Signature One

Connections
Balanced XLR, 1/4" jack

Phantom power
+48V

Parametric bands
4

Frequency range
Low: 45 to 650Hz
Low-mid: 100Hz to 1.5kHz
High-mid: 700Hz to 10kHz
High: 1K to 15kHz

High and low-pass sweep filters
10Hz to 350Hz/4kHz to 30kHz

S/N
128dB (mic), 75dB (line)

THD
0.05%

Attenuation
±15dB

Headroom
+24dBm

words **Adam Fuest** images **Katharine Lane-Sims**

To the rear of the unit are line inputs and outputs on both XLR and TRS jack sockets, an XLR mic input, plus the obligatory IEC mains socket.

The Signature Two is a dual-channel affair, offering two 4-band EQs, only this time they are swept, as opposed to parametric, and are missing the Signature One's low and high-pass filters. They also feature two microphone amplifiers, but, unlike the Signature One, there's no phase reversal switch.

The frequency sets for these are as follows: low from 40Hz to 650Hz, lower-mid from 150Hz to 2kHz, high-mid from 700Hz to 10kHz and high from 1kHz to 15kHz. Don't let the fact that these bands have a fixed Q fool you – the articulation available from low and lower-mid bands is very rewarding indeed!

To the rear of the unit are inputs and outputs on both XLRs and balanced TRS jacks and microphone input on XLR (as with the Signature One). The cases themselves are particularly rugged, and all gain controls have a centre detente.

In use

Both units prove to be really good tools in the rack, relegating previous favourites to the back burner. The Signature One, not surprisingly, with its four bands of parametric, turns out to be a real problem-solver. Although we have come across tighter Qs, it's the sweet nature of the Signature One that wins you over. And whereas one can often go hunting for the offending frequency, with the Signature One, we just seemed to go straight to it – treating vocals, for example, is one of the areas this really made itself apparent. Powerful male vocals can sometimes have an abrasive edge that can be particularly difficult to eradicate without dulling the vocal articulation, but with the Signature One we simply nipped in at about 3kHz and pulled out about 3dB, then added about 2dB on the high-band at about 7kHz and the voice sounded great, positioned beautifully in the track with plenty of presence.

To get the same effect with a digital EQ you would end up cutting and boosting on at least three bands, with anything up to 10 or 15dB of cut and boost! We know, because we tried, and in comparison to the result gained with the Signature One, the digital EQ sounded like a right dog's dinner.

The Signature Two, on the other hand, doesn't have the analytical control of its brother, but does have the ability to apply broader, more enhanced processing to the audio chain, particularly in the two lower bands, where it's able to apply a ridiculous amount of weight to guitars and basses.

This is one of those boxes you start to use on everything (for engineers, this is one of those gadgets that makes you look good). It's very hard to do anything wrong with the Signature Two, because the moment you go too far it becomes obvious. It's one of those rare creatures that's perfectly happy »

Signature Two

Connections
Balanced XLR, 1/4" jack

Phantom power
48V

Sweep EQs
Dual 4-band

Frequency range
Low: 40Hz to 650Hz
Low-mid: 150Hz to 2kHz
High-mid: 700Hz to 10kHz
High: 1kHz to 15kHz

S/N
128dB (mic), 75dB (line)

THD
0.05%

Attenuation
±15dB

Headroom
+24dBm

Microphone gain
60dB (max)

to be placed across keyboard parts, from piano through to Hammond organs and old analogue synths, all of which are notorious for illustrating the weakness of an EQ, thanks to their complicated harmonic structures.

On drum overheads it was easy to give the cymbals a gentle lift at 15kHz without causing any unwanted side-effects, but, in this sort of application, one really does miss the high-pass filters. On reflection, this would be the only thing that is (in our opinion) missing on the Signature Two – the inclusion of a switched low and high-pass would have helped, but fixed filters are a poor substitute, and the solution adopted on the Signature One would have been preferable.

It has been a few years since this particular reviewer has sat in front of a Trident Series 80, but this EQ brought that experience rushing back (although we suspect that the Signatures sound a little better than the original console!).

Verdict

Though there are many EQs available at the moment, some have trouble justifying their existence as usable tools in the studio and are often used as an attractive way of filling blank spaces in the rack. The MTA Signature range are most certainly not in this group, and will doubtless become essential items in many engineers' racks.

If there's a criticism to be made, it would be the choice of knobs and their positioning. These units are very powerful tools and offsetting the knobs (so that they are not in a line), as was done with the old Trident EQs, would definitely help, as would using slightly larger knobs. They do let the unit down – first impressions mean a lot to some people, after all.

It's only a little thing, but these are world class EQs, and so deserve better. Currently, there is a lot of good-looking kit about; Avalon and Millennium both spring to mind, and, side by side, the MTA EQs certainly offer up a stiff fight on the aural charisma stakes. These EQs are a credit to MTA and should encourage greater interest in the MTA consoles.

From Trident to MTA

Studios, whose credits include such records as [illegible] Judge' and the first James Taylor album, [illegible] Trident Audio Developments, [illegible] for commercial sale.

[illegible] was a great success and I have fond memories [illegible] worked [illegible] Trident Series B [illegible] and [illegible] the consoles made by MTA are modern Trident [illegible] using both traditional and modern techniques [illegible]

[illegible] Trident [illegible] because of contractual [illegible] Toft was unable to start making consoles for three years. [illegible] the time elapsed, MTA (Malcolm Toft Associates) [illegible] The consoles made by MTA are modern Trident [illegible] using both traditional and modern techniques [illegible]

[illegible] fully modular [illegible] console in 16 channel sections. So, for example, you can build a 32-channel console with 16 tape returns [illegible] another 16 monitor returns or another [illegible] Virtually every section of a console can be added: [illegible] sends to [illegible]

[illegible] the wrong idea. This is a proper MTA console [illegible] EQ and mic amps – it's the project studios' dream [illegible]

The faults we have raised are trivial and, overall, do not affect the quality of the sound or the performance of the units in any way. It certainly is not going to stop them going in our rack. But is this the end of the range, or are we going to see a nice compressor coming out of the MTA stable? We live in hope...

More from: Fletcher Electroacoustics, St Mary's, Barton Road, Torquay, Devon TQ1 4DP
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Blue Microphones The Blueberry

Cardioid condenser microphone

Price £1,052

For Sounds great ⊙ Looks cool ⊙ Reasonably-priced, given the quality

Against Shockmount is a little fiddly

Verdict A wonderful mic from a genuinely forward-thinking manufacturer

With a few notable exceptions, you could be forgiven for believing that microphone design and manufacturing reached its peak decades ago. The classic styling and sound of mics such as Neumann's U87 and U47 have been copied by so many manufacturers that it's difficult to have an opinion about more than a few of them, yet anyone who's had a U87 come apart in their hands knows that these mics are not indestructible, irrespective of their premium price. Furthermore, the variation in sound from one vintage mic to the next isn't very encouraging if you're trying to mic something in stereo. Now, this isn't a criticism of vintage mics, it's just that their condition and sound varies considerably.

Thankfully, there are a few individuals that have taken it upon themselves to restore vintage mics to their former glory, and this is essentially what brought together Baltic Latvian Universal Electronics (BLUE) founders Martins Saulespurens and Skipper Wise. A chance meeting in the mid-'80s led to them seeking out vintage mic stocks of varying quality and condition, often from Eastern Europe. However, the more they discovered about the venerated mics they were working on, the more they realised that significant improvements could be made.

By applying modern quality control and manufacturing techniques, combined with an extensive understanding of the distinctive characteristics of vintage mics, there was plenty of scope for Blue to eclipse the mics they had originally sought out. The first result of their endeavours was The Bottle mic – visually similar to Neumann's CV3, hence the name – that first appeared in the US in 1994. Since then, Blue have continued to expand their range year-on-year.

Unfortunately for UK customers, they have not been distributed here until now. The mic up for review here is The Blueberry, which has been available in the US for over a year and has already picked up plenty of support. In price terms, The Blueberry is at the budget end of their range, retailing for just over £1,000.

Overview

The Blueberry microphone is a fixed-pattern, large-capsule cardioid condenser with very distinctive styling. One aspect of this is the box-like shape.

One of the main characteristics of all Blue microphones are their tuneable, hand-built capsules. The Blueberry features a large, single-membrane capsule, with a 6-micron thick diaphragm, sputtered with their own 24-carat gold and aluminium mixture.

Continuing Blue's audiophile approach to design and construction, the electronics in the Blueberry are fully discrete (no ICs) and use the highest quality components. It also features Blue's custom-designed transformer. As you would expect for a non-tube condenser, it takes its power from 48V phantom.

Blue would be the first to admit that the capsule is pivotal to their mic design, so it's hardly surprising that they choose to construct their own capsules. These capsules are hand-tensioned and then measured in an anechoic chamber.

But capsule construction is only half of the story – through their years of mic restoration and design, Blue have built up an extensive knowledge of the frequency responses of many vintage mics. This knowledge, combined with the 'popular opinion' of engineers and musicians, has been used to tune their capsules to suit modern-day recording needs.

The result of this kind of capsule design is that The Blueberry is not what you would call a flat frequency response mic, but it's not trying to be. The frequency response chart reveals a mild lift at around 2kHz, a dip at 800Hz and a broad lift from 7kHz to about 15kHz.

But aside from the frequency response, the care and attention taken on the electronics side of things results in some very healthy-looking noise specs. A quick comparison between The Blueberry and Neumann's U87Ai reveals the following equivalent noise figures: U87Ai 12dB, Blueberry 8dB, both A-weighted IEC 651. In fact, The Blueberry has better noise figures than virtually all the classic mics that Blue are up against.

specifications

Type
Pressure gradient cardioid mic

Sensitivity @ 1kHz into 1kΩ
20mV/Pa

Impedance
150Ω

S/N ratio
86dB A-weighted (IEC 651)

Noise level
8dB A-weighted (IEC 651)

Maximum SPL for THD 0.5%
133dB

Power
48V phantom

Weight
520g

Dimensions
235 x 50 x 30mm

words **Jon Musgrave** images **Katharine Lane-Sims**

Well, there's no denying it's blue – and it sounds as good as mics twice its price

In use

The Blueberry comes packaged in a very stylish, lined wooden case. The review model was supplied with the 'Series I' shockmount/pop shield, a more basic bracket design being the other mounting option. The advantage of the combined shockmount and shield is that you'll never find yourself struggling with a wandering pop-shield. In practice, you have to make sure that the elastic of the cradle is seated correctly to get the best results, but the cradle provides excellent isolation.

Before we started using The Blueberry, curiosity got the better of us, and we decided to take a look under the capsule protector. The quality of construction is impressive, with many of Blue's components specially made at their own factory. The capsule tensioning screws are clearly visible, with their factory positions marked. The mic's electronics are encased in a Perspex box, which is then surrounded by the metal casing.

We tried The Blueberry on a number of sound sources, including spoken word and vocals. Blue designed The Blueberry with vocals in mind, so it's hardly surprising that the results were excellent. The mic is designed to avoid excessive proximity, and this allows you get in pretty close. The mic sounds very smooth and open, and this applies to a number of close-miked sources, including nylon and steel strung guitar. The Blueberry also worked very well on congas and bongos.

Verdict

Blue's approach to mic design and construction is admirable, but at the end of the day it's the sound of a mic that really counts. We passed The Blueberry around to a number of engineers who were ready to be quite cynical, especially considering the styling of the mic – the whole 'style over content' argument, in other words. Once they'd tried it out, however, they were completely sold.

The bottom line is this mic sounds better than any other mic we've heard at this price, and is certainly in competition with mics up to twice the price.

Okay, so it's not a multi-pattern mic, but most multi-pattern mics get used in cardioid mode much of the time anyway. If you can open up to a mic that is visually different – read: not grey or black, then you may also find that the artists you work with will up their performance to a new level, too.

Let's face it: fundamentally, the whole process of recording is about capturing the best performance you possibly can. Couple this mic with a quality preamp and you will be equipped to do just that for many years to come.

More from: The UK Office, Berkhampstead House, 121 High Street, Berkhampstead, Hertfordshire HP4 2DJ Tel: 01442 870103
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The Blue dynasty

Since their first mic (The Bottle) was introduced just over five years ago, Blue have continued to introduce new mics at regular intervals, and the final mic in their range, The Kiwi, will be available soon. The full range, from the top down, is as follows: The Bottle, The Cactus, The Kiwi, The Mouse, The Blueberry and The Dragonfly.

The two flagship mics The Bottle and The Cactus, are both valve designs, with multi-pattern options. The Bottle achieves this by offering an ingenious interchangeable capsule system, allowing the user to choose from eight different capsule designs to suit their chosen application. To give you an idea of Blue's understanding of the importance of vocals, three of these capsules are 'tuned' for vocal recording. However, there's also an omni capsule, a small-diaphragm cardioid and a figure-of-eight. With the Bottle being the flagship model, it's not surprising that much effort has also gone into the power supply design and other accessories, such as champagne tube mic cable. But it's also nice to see that the tubes are hand-picked and tested by Blue.

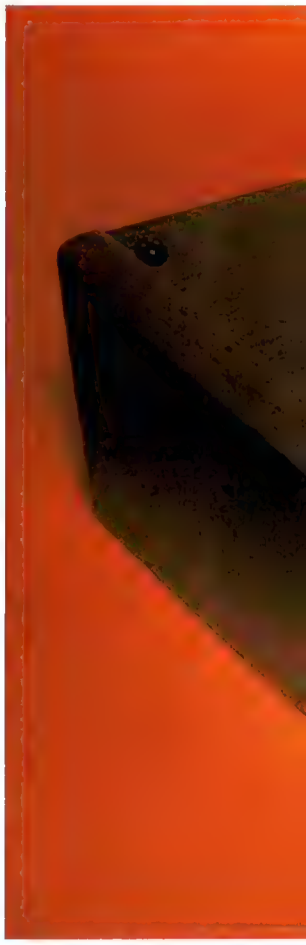
The Cactus offers multi-pattern options, but with a lower price and more compact design than The Bottle. It features a multi-pattern version of The Bottle's B7 capsule, and a special power supply.

The nearest Blue make to a U87 is The Kiwi. This will be available shortly, and will feature nine pattern options and fully discrete class A electronics.

The Mouse is available in two versions, with transformer and transformerless output options.

Korg CX3

Modelled tonewheel organ



Price £1,799

For Eminently portable ⊙ It's got the sound ⊙ MIDI control of drawbar movements *et al*

Against No spring reverb simulation ⊙ A bit pricey

Verdict A stylish keyboard with all the organ sounds you'll ever need, in an extremely portable form

Anyone who's ever been involved in the movement of a Hammond tonewheel organ from one place to another, especially up a staircase, will know exactly why something like the Korg CX3 exists.

Although most Hammonds can be surgically 'split' for easier movement they are still not light and are definitely not a one-man operation. Add to this the weight and bulk of the world's coolest piece of furniture – the Leslie cabinet (an absolute essential for the sound) – and thoughts of back strain and hernias become all too real. Little wonder then that the gigging musician has often opted for a more portable and often cheaper alternative in the form of a compact organ or a synth/sampler with an organ patch.

Now, compactness and portability is one thing, but there's nothing like the throaty roar of a Hammond B3/C3 and a valve Leslie, a sound that is incredibly difficult to simulate with all its variations and nuances, and many attempts have fallen short.

Recent developments in virtual modelling technology, however, have enabled us to get ever-closer to the sound of the real thing and in recent years, there have been several contenders, particularly from Roland and Hammond themselves. The latest candidate is the Korg CX3.

Overview

Now, if the name 'CX3' sounds familiar, it's because this model is a new version of an older model – Korg first produced an analogue CX3 organ back in 1979. 20-odd years on, Korg are using a proprietary sound modelling technology that they call 'Rems', which they claim can reproduce the complex characteristics of both electronic and acoustic instruments by emulating a wide variety of sound generation characteristics.

These include instrument bodies, speakers and cabinets, acoustic fields, microphones, valves and transistors. The result is the CX3 tonewheel organ modelling tone generator, which reproduces both the sound of a tonewheel organ and its companion rotary speaker, warts'n'all.

The CX3 certainly makes a play for classic status with its traditional looks. It's equipped with a veneered wood casing that is unfortunately likely to end up scratched and chipped if taken out on the road. The review model was already a little the worse for wear when it arrived (it wasn't me Korg, honest!); still, that's what sandpaper and furniture polish are for…

Rather than the dual-manual set-up of older Hammonds, Korg have opted for a single keyboard that can be split to handle two sounds. All of the controls are neatly and logically laid out in a fashion that organ players will find immediately familiar.

The switches to control the rotary speaker effect sit just to the left of the lowest key, along with master level, treble, bass and reverb controls and some switches to select which set of drawbars is active.

Everything else is laid out on a ledge above the keyboard, with vibrato/chorus controls and drawbars to the left and percussion switches to the far right. Right of centre on the ledge is the visual display, along with parameter adjustment buttons, bank select up/down buttons and eight program select buttons.

Apart from a front panel headphone socket, all the connections and the power switch sit neatly in a recess on the CX3's rear panel. Output is via unbalanced jack sockets; left and right are provided with the left one designated as the mono socket.

A dedicated jack socket is provided for connecting the optional OXP-1 foot controller or an expression/volume pedal. There are two more assignable sockets that can be used with either of those pedals or with on/off footswitches. The usual MIDI In, Out and Thru sockets are also present.

Get with the program

The CX3 comes with 128 programs, all of which can be edited and stored. These are divided into two types: Normal and EX, 64 of each in eight banks of eight. The main difference between the two types of program is in the way that they utilise the two sets of drawbars.

There are two onboard tone generators: upper and lower. Both types of programs use the upper tone generator and come with a preset sound incorporating stored parameter settings, including virtual drawbar positions, but three switches (Drawbar preset, Drawbar 1, Drawbar 2) nestling to the right of the keyboard, allow the choice of using those preset virtual drawbar

words **Trevor Curwen** images **Katharine Lane-Sims**

Things have moved on since 1979's original CX3, but the name remains the same for Korg's updated model

settings or switching to the physical drawbars.

Now, with a Normal program, the sound across the keyboard is created by one set of drawbars, whereas an EX program uses both sets of drawbars, allowing some interesting alternatives to the more traditional sounds.

Normal programs can take their sound from either set of drawbars, so in Normal mode it's possible to switch from one set to the other for a different sound. Thus in a Normal program, you have three choices to switch between at will: a virtual drawbar setting and two different physical drawbar settings. In EX mode, the choice is between a virtual setting and one physical setting that incorporates both sets of drawbars.

Normal programs can also be split at the push of a button to simulate a dual manual organ. When this is done, the lower tone generator is brought into play for the left portion of the keyboard, and another set of three buttons directly underneath those for the upper tone generator allow use of the preset virtual drawbar settings or either of the physical sets. In Normal mode it's also possible to address the lower tone generator via external MIDI control while physically playing the upper generator from the CX3 keyboard.

Parameters

There are two CX3 edit modes, each addressing eight groups of parameters. Editing any of the parameters is straightforward, with the display showing all relevant information. Global adjusts such things as master tuning and all the MIDI parameters, while Edit takes care of all the parameters that are stored with each program, such as drawbar level and rotary speaker settings, among many others.

The level of attention to detail that goes into the programming is quite astounding, with virtually all the constituents of a Hammond and Leslie combination given voice in the CX3. This is perhaps most apparent in the tonewheel parameters, where the sound of a clean tonewheel or a vintage one with leakage noise can be chosen.

Leakage noise, manifesting itself as a whistling sound, is a large element in accurately recreating the sound of old organs, and in the CX3 can be assigned any value between 0 and 99. Tonewheel overtone level and the level of key click for both key-on and key-off can be similarly specified.

A similar level of detail is applied to the rotary speaker effect, with low and high speeds and various accelerations and decelerations adjustable separately for both the horn and the rotors. Additionally, various simulated miking options can be addressed.

With the rotary effect switched off, a standard speaker is simulated, but before the sound reaches either type of speaker it's passed through one of two options of simulated amps with full control over distortion and tone. Alternatively, Preamp, a direct line out, can be selected, an option that would be

Tonewheel jargon

Anyone unfamiliar with a tonewheel organ's operation may be a little confused by some of the terms used in the review, so here's a brief rundown.

Tonewheel organs make their sound through a series of notched rotating wheels known as tonewheels that spin in a magnetic field and induce voltage in a coil. The classic tonewheel organs were built by Hammond and the B3 and C3 (identical apart from their wooden casing) are generally regarded as the finest of the range.

Tonewheel organs are usually dual-manual (i.e. with two keyboards, each of which could be assigned a different sound), and fitted with a set of bass pedals played by the feet.

Hammond organs are usually partnered by a rotary speaker made by Leslie that has a rotating treble horn and bass rotor. Leslies are controlled from the organ and can run at a fast or slow speed, or stop dead. Valves in both the organ and the Leslie cabinet allow an overdriven or distorted sound to be obtained when driven hard.

Drawbars are levers that can be combined to sculpt the sound of the organ. They can be pulled out for maximum volume or pushed in for silence. Each drawbar controls a different harmonic aspect of the sound, and there are three colours of drawbar. White produce the fundamental note and the octaves above it. Black produce pitches a fifth or a third above the fundamental. Brown produce the octave below the fundamental and its third harmonic.

Key click is an electrical pop, the result of the key making contact. Originally considered a defect, it's a sound that has come to be liked by some players.

Percussion is a pitched attack transient that can be added to the start of a note. If playing in a legato style, 'percussion' will only be heard on the first note.

Vibrato and Chorus are effects built into Hammond organs. There are three levels of each and they can be applied to the upper or lower manual.

Korg get full marks for the smooth drawbar movement on the CX3. This is definitely a player's instrument

All those back-panel connections in close-up, and there's even a full complement of MIDI I/O

specifications

Keyboard
61 note

Drawbars
2 x 9

Polyphony
61 note

Programs
128

Effects
Vibrato/chorus, rotary speaker, overdrive, reverb, 3 x amp simulations

Outputs
L, R (unbalanced jacks), headphone jack

MIDI
In, Out, Thru

Control inputs
Expression pedal jack, assignable pedal/sw 1, 2 jacks

Weight
17kg

Dimensions
1082 x 403 x 148 mm

practical if an external amp or preamp/rotary combination were to be used.

Plenty of other parameters can be edited, including the percussion and reverb options. Room, Hall and Plate reverb types are available, but no spring reverb simulation, probably because it wasn't fitted in the B3. Some of the other Hammonds (like the L100 series) had spring reverb, so it might have been a useful addition, but the plate sounds very similar anyway.

All the drawbars and the front panel controls relating to them can transmit MIDI information, as can the controls relating to vibrato/chorus, rotary speaker, percussion and overdrive functions, so it's possible to play the CX3 and record all the information into a sequencer in real-time for later playback, including any tonal changes made by tweaking the drawbar positions.

As a MIDI master keyboard, the CX3 is initially limited as, in normal operation, each key is set to transmit fixed-velocity notes. This can be changed in the global edit pages should you wish to use the CX3 keyboard to play a velocity-sensitive sound module.

In use

The first quality of the CX3 to become apparent is the smooth and fast response of the keyboard. Korg have excelled with this one. Full marks too for the smooth drawbar movement, the instant switching between the drawbar sets and the easy action of the rotary controls. This is definitely a player's instrument!

Running through all of the 128 programs, which are organised into named banks such as R&B or Jazz for easy reference, the amount of variation in sounds available from the CX3 becomes readily apparent. While the sounds available are all obviously organ sounds, they run the whole gamut from soft and mellow through to screamingly distorted heavy rock sounds, with all the subtleties in between.

It obviously helps that many of the sounds have been programmed by Hammond aficionados such as, among others, Brian Auger, Al Kooper, Greg Phillinganes and Lonnie Smith. Their accumulated experience has given us a batch of selections based on their own signature sounds, as well as the sounds of other famous players, as found on the classic recordings of the past few decades.

Thus, under thinly-disguised names, we find reproductions of Booker T's 'Green Onions', Procol Harum's 'Whiter Shade of Pale', Deep Purple's 'Smoke On The Water' and The Band's 'Chest Fever', and pretty damn authentic they are, too.

Looking closer at the individual sounds and the implementation of the effects, it has to be said that these are very well-done. It's quite often the quality of the overdrive sound and the rotary speaker simulations that are lacking, but in the CX3 these are admirable.

The overdrive knob, or a connected expression pedal, can be turned up to increase the level to the internal amp simulation, and this it does in a controlled manner that increases the level of distortion in a natural way that never sounds grating or artificial.

The rotary sound is as close to the real thing as any simulator heard previously, and, given the range of tweakable parameters available, can be tailored to taste. Likewise with the percussion, which can add an authentic clunk to each note.

One thing though. It's curious that given that the CX3 reproduces just about everything a Hammond and Leslie does, bass pedals have not been included – especially when one rival keyboard (the Hammond XB-1) actually features three tone generators so the sounds of two keyboard manuals and a set of pedals could be used simultaneously using MIDI.

In response to a query about this, Korg said that the CX3 is more an updated replacement for their original CX3 (which didn't feature pedals) than a reproduction of a pedal-equipped Hammond, so fair enough, but perhaps it's a missed opportunity to take the updating one stage further.

Verdict

For a gigging musician who needs that tonewheel organ/rotary speaker sound but can't afford a B3 and a Leslie, and doesn't have a team of muscled roadies at the ready, the CX3 will be just the thing. It would also make a great asset in any studio.

The popularity of the tonewheel organ sound shows no signs of abating, and although there are now great-sounding software organ simulations like Native Instruments' B4, something of that ilk could never replace the true tactile nature of a performance on a physical instrument. Especially when that performance involves flicking the Leslie on and off, tweaking the drawbars and switching between sets in real-time.

At nearly £1,800 you would have to be really committed to buy one, but the CX3 will undoubtedly be gracing many stages and featuring on a whole load of recordings in the near future.

More from: Korg UK, 9 Newmarket Court, Kingston, Milton Keynes MK10 0AU
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Bias Peak 2.5

Mac wave editor

Price £349 (see box, facing page)
For VST plug-in support › Easy install/authorisation
Against Costly upgrade from 2.x to 2.5
Verdict Some interesting add-ons, but not as big a deal as it first seems

words
Dave Harrow

new features

- VST plug-in support
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- Repair Click function
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system requirements

- Power PC (or higher)
- System 7.6.1 or later
- 64Mb RAM minimum
- 5Mb available hard disk space (for program and online help)

One of the few products that has gradually emerged as an industry standard for audio editing over the last few years is Bias Peak. Its ability to incorporate each new turn in plug-in architecture and navigate the already-overflowing choice of sound formats may account for there being little change in the market in the way of serious competition, since the last time we reviewed Peak's update to 2.03 (issue 66).

Well, it's update time again in the audio department, dear readers, and those nice people at Bias, Inc. have leapt a staggering .47 to bring us a welcome new upgrade for their Mac wave editor. There's not only a total facelift, giving a more professional look, but also a number of classy editions to Peak's already large features list, as well as the inclusion of VST support. Sounds like an update worthy of investigation, then…

Overview

For those of you unfamiliar with Bias Peak, it would be well worth referring back to issue 66 for a more detailed account of some of the product's history. But let's run through Peak's basic functions anyway, before heading into update detail.

Peak is a stereo waveform editor capable of handling all your audio editing needs and then some, and it can import and export virtually all audio file formats. With Peak you can do everything from adding effects and repairing and treating samples right through to preparing album tracks for burning to CD.

About that upgrade

So what's new? Well, a big jump cosmetically is the first adornment you'll notice. We wouldn't go so far as to say it's a brand new interface, but it's definitely got a more professional look. Gone is the old coloured toolbar, replaced now with a sleek grey/blue and fully customisable number, plus a floating palette to give easy access to editing tools.

A new pencil tool has been added to the tool palette, allowing precise, sample-level editing simply by drawing a line, and left and right channels can now be independently processed.

Next is a new Links addition to the main menu. Like many other software companies trying to find new ways for authorisation systems, Bias no longer rely on floppy-key diskettes, or acquired challenge/response codes. Peak now offers direct online registration links, and full integration with technical support, online documentation and other resources on the Bias website (www.BIAS-inc.com).

This is a fine resource that turned out to be a little tricky in use, as the machine we tested the software on launched an old, forgotten version of Internet Explorer, and took us to media.europe.apple.com for some unexplained reason. There seem to be no browser preferences to be set, either. A simpler approach is to send a quick e-mail to Bias, Inc. with your serial number, and a Product Authorisation Code (PAC) is promptly returned. Again, fine if you're online.

If you're not online, there's always the third option of good old snail mail. For all you true net-heads, though, there's also fully integrated support for CDDB, which automatically names CD tracks through the online

CDDB database during importation of audio CD tracks, and this does work! Further additions to the pull-down menus include VST Plug-in and additional external sampler support, but more on those later.

In use

It's hard to think of an audio function that Peak can't perform. It's possible to alter any part of an audio file of any length, whether changing the pitch of individual mono samples or adding gain to your final stereo mix – simply drop them in to Peak and start working.

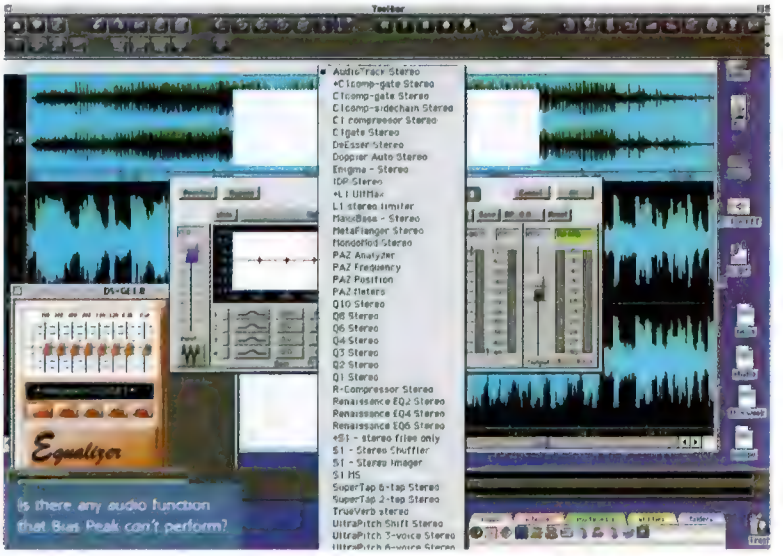
All functions are accessible from comprehensive pull-down menus, or alternatively, run your mouse over an icon in the tool bar and its name and function will appear below in the information window. After a few sessions, you'll begin to get an idea of which functions you use regularly, then you can add your favourites to the fully-editable toolbar by opening the shortcuts and toolbar preference and adding the appropriate icon.

The long-awaited inclusion of VST plug-in support has been well worth it – not only do you now have access to the wonderful Steinberg VST architecture, but Peak 2.5 comes with 25 plug-ins included. These range from a cute-but-quirky audio-trigger beatbox to a rather nifty vocoder, as well as the usual delays, ringmods and so on, to name but a few. The included plug-ins are less processor-hungry than some VST effects, so will make a handy addition to your Cubase plug-ins collection. You are also able to 'bounce' VST plug-ins together to save your CPU.

Having Peak and an audio sequencer open together will be a serious drain on your RAM, though, as well as causing some confusion over which has output priority, but with a bit of memory allocation juggling, this is achievable. We were soon dropping bits of audio from Logic into Peak, adding processing and effects, then re-importing them with ease.

Minor improvements to the Loop-It command (which automatically loops audio selections) have given this useful function a much smoother feel, although nothing could be simpler than looping a section of audio with Peak: simply select a section, then click Loop Selection. That's it!

The Guess Tempo/Loop Surfer functions seem to be more accurate than before, and a new Repair Click function quickly and easily repairs a single digital click that might otherwise need removing. Sampler support can now access SMDI transfers using Ultra-Wide SCSI devices, as well as Akai, E-mu, Ensoniq, Kurzweil, Peavey, Yamaha and other sample formats.



However, when we hooked up an Akai S3200 to the Apple PowerBook used for this test (via a USB-to-SCSI cable), Peak had great difficulties even finding the sampler and actually crashed several times in the process. This same test was checked with ReCycle on the same machine and worked perfectly – one for the bugbase, we think. It would be worth checking the Bias website for smaller bugfix updates in the weeks to come, as this procedure seems to be norm these days.

Verdict

For us, it's still the preferred Mac audio editor on the market, but this update is a little like unwrapping this year's Christmas gift, only to find last year's with a paint job. The welcome addition of VST support aside, there isn't that much to get excited about. It's not a case of Bias, Inc. resting on their well-earned laurels, because maybe there are only a finite number of improvements that can actually be made to a product as good as Peak. It's more a question of whether this should have been a free update instead.

More from: SCV London, 6-24 Southgate Road, London N1 3JJ Tel: 020 7923 1892
Web: www.scvlondon.co.uk

An unbiased overview

Berkley Integrated Audio Software, to give them their full name, still have the lead when it comes to multi-function audio editors. There are many products on offer (even freeware on the net) that can cut-and-paste audio, from Sound Studio to high-end editors, like Spark, through to applications that connect to samplers such as Mesa and TransferStation, but there's still little competition in the all-round market.

In an informal survey we conducted amongst a variety of Mac audio users, from web designers to DJs, Peak seems to have become the 'industry standard'. A few web-heads clung on to the old faithful SoundEdit, but, in general, people have adopted and adapted Peak to suit their individual needs, which is obviously the reason for its

Prices

Basic	£349
TDM/VST	£549
Upgrade from 2.x	£100
Peak LE	£75

XLARGE

Derek Santini/Columbia

The regeneration game

What's the key to longevity? Cross-referencing, according to Andrew Roachford, that is...

words **Jon Andre Holley**

I actually wrote 'Cuddly Toy' with a tongue-in-cheek reference to Bruce Forsyth's immortal line in *The Generation Game*." Roachford's opening admission is made all the more poignant when one considers the longevity of a career that saw a young black South Londoner gatecrash what was considered to be a predominantly white-boy genre in the abrasive shape of rock, and, against all odds, maintain the position of Columbia's most consistent-selling UK black artist throughout his 12 years in the industry.

This is a marked achievement that is encapsulated in Roachford's current 'Greatest Hits' album, *The Roachford Files*, an album that features some of the singer/songwriter/producer's most memorable moments, alongside contemporary new songs of the calibre of the latest single 'From Now On'. They're all in there, beautifully crafted rock 'n' soul songs recorded with love, affection, skill and craftsmanship.

"The thing with my music is...," begins Andrew Roachford, with what proves to be a customary mid-sentence pause, "...a lot of people haven't connected with all these tunes that I have made. This album is a nice summing up of my career to date. It's a good platform for the future."

And evidence of the future is interspersed with the past in the shape of the aforementioned trio of new tracks. The single includes mixes by Sunship, Full Crew and Underground Solution, all of which were recorded at the man's own custom-built Roach House studio in London. Roachford, in fact, re-recorded the vocal for each mix, as well as supplying his own versions, displaying his recently honed talent for hip hop-inspired 'mixed' rhythms. "The emphasis on my beats are that they are funky," Roachford concurs. "I wanted to sit my songs on groove-based rhythms. I used live samples and programming and mixed it with live kit. That way I could make some exciting, fluid, rhythms.

"I believe in being receptive and open to music. That, to me, is what it is all about. If you travel with blinkers, chances are that you will never come up with anything of any individuality, simply because you will be stuck in the same over-purist rut. I worked with Sunship, Underground Solution and Full Crew on this project, and it was a tremendous learning experience. I didn't do what I normally do, which opened me up to new ideas and also opened these guys up to other ways of recording. That's the beauty of cross-referencing."

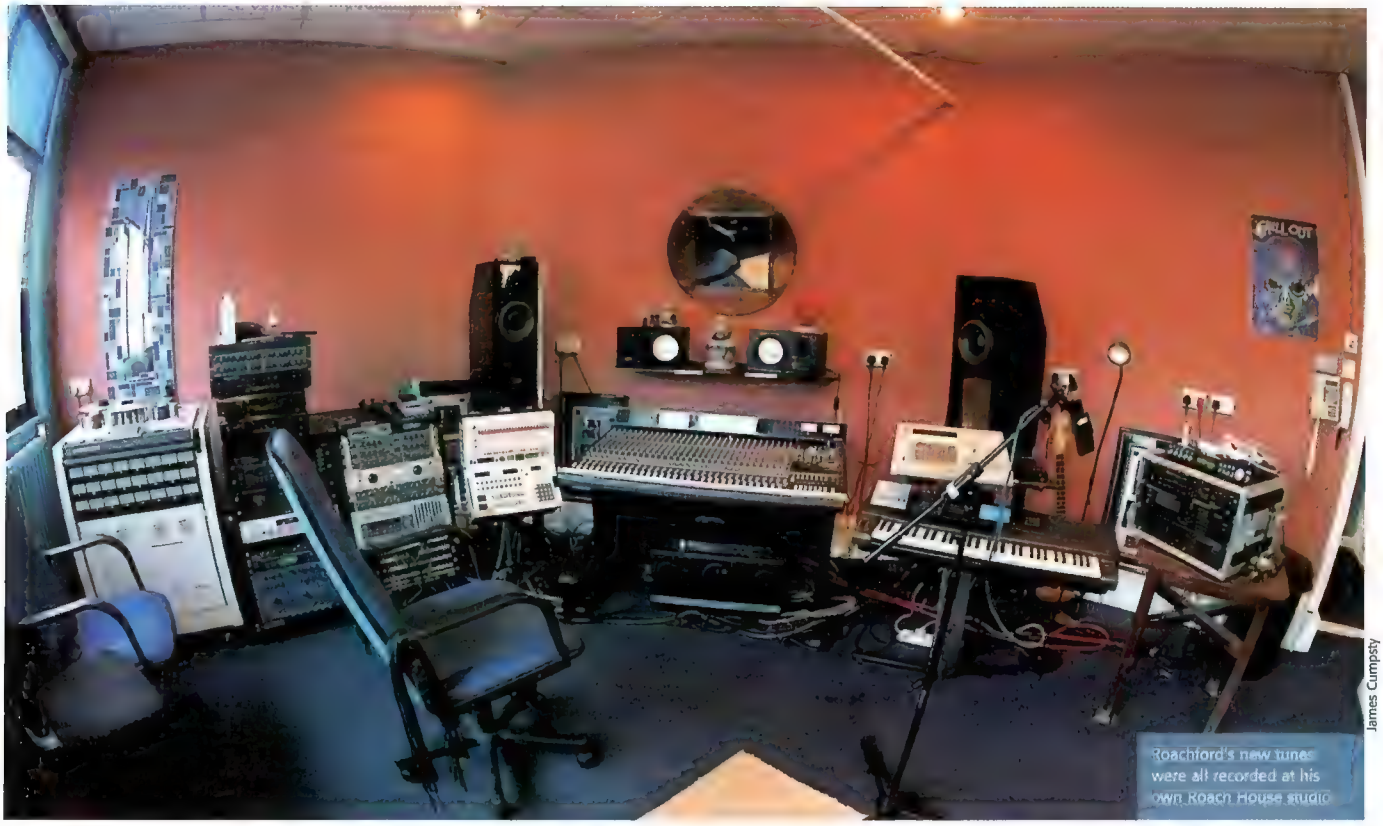
For Roachford, this 'cross-referencing' cuts both ways. "For example, I'm old-skool about sampling," he claims. "The Underground Solution people came to my studio and immediately asked, 'Where's your computer?' When I said there wasn't one, they were like, 'What! No computer?' Mortified, I can tell you!" With Akai's MPC-3000 MIDI Production Center, a 16-bit sampler/sequencer/drum machine, at the forefront of Roachford's compositional *modus operandi*, hardware is clearly the name of his game.

"I work without Pro Tools and Cubase," concurs Roachford, before admitting to the pros and cons of his preferred hands-on approach. "Mixing without these facilities *is* a lot more tedious. However, I find it grooves better, sounds better than Pro Tools, and sounds more convincing in a sense that is not better in terms of clinical quality, but has an intrinsic, ingrained quality that is priceless to the effect of a recorded song."

Roachford leans over to elaborate: "The digital thing is not very giving, nor satisfying – to my ears, anyway. It sounds like a brand-new leather jacket that hasn't been broken in, to use an analogy."

The relatively recent move towards lo-fi and 'back to the future'-style analogue recording sees Roachford straddling the fence, somewhat, happily committing samples to good old 2" tape. "When I came into the business in the '80s, digital was king," he recalls. "Everything sounded so pristine and it got to a »

"Some 19-year-old stopped me in a car the other day and asked if he could remix that 'choon' I did with 'Toy' in the name"



Roachford's new tunes were all recorded at his own Roach House studio

James Cumpsty

Tools of the trade: E-mu's Proteus 2000, Roland Super JV and JD, Korg Wavestation, and Akai MPC 3000

James Cumpsty

point that people were complaining about the fact that digital perfection was to the detriment of the spirit of a record. So everybody deliberately used filters and stuff to make their stuff dirtier.

"To continue with my leather jacket analogy, running through filters and using an analogue recording process is kind of like stepping all over the jacket and then getting a car to drive over it. The effect is like going to Soho Market to buy one of those second-hand Shaft pimp jackets! That's why my MPC-3000 is important to me – a lot of my stuff is on that."

Other than Roachford's trusty Les Paul guitar, his backbone electronic instrumentation remains resolutely digital. "I also use a Proteus 2000 and a Roland JV-1080 with all the hip hop cards," he concedes. Here one is left with a distinct feeling that for Roachford these are simply tools, a means to an end.

Roachford changes tack: "I'm particularly proud of 'One Good Reason', which encapsulates my philosophy about beats. I want to send that to Method Man to make a hip hop joint with it." Indeed, Method Man's chart-topping collaboration with Texas has Roachford's approval. Hip hop has clearly come into his life in a big way and aroused a creative juice or two in a man who has never been afraid to merge the genres. "If an artist is hearing the music, they will always get around the politics of recording a project," says Roachford. "I thought the Texas thing was great! It really worked. The rhythm track was wicked after it had been bumped up. As I said, it's all about going against the grain."

There's that word again, this time in a different context. Roachford's line of conversation evolves – rather symbolically – into the concept of barrier-breaking. He cites drum'n'bass as a case-in-point, positing, "By speeding up James Brown's 'Funky Drummer' and adding a reggae bassline with a rave edge, we got drum'n'bass. It was the first UK-produced urban sound that was solely of our own making, and I found that fact particularly exciting."

"Now two-step garage has taken over and stolen its thunder," asserts Roachford. "Garage is a bit of a misnomer, but, as a durable, world-class UK urban music, it's accessible, non-elitist and exciting.

"I liked the sound of the London fusion of drum'n'bass, with broken up, staggered beats, crude samples and wailing vocals. It was raw and different; rough and ready. It's still got the edge, though. The kids on the street love it and everybody feels that they can make garage. Some 19-year-old stopped me in a car the other day and asked if he could remix that 'choon' I did with 'Toy' in the name" ['Cuddly Toy'].

Now there's the rub. Had Roachford's debut single – which graced the Top 10 without hitting the No.1 spot in 1988 – been released today, it would have been at No.1 for a month, for these are the days when few singles achieve success of 'Bohemian Rhapsodic' proportions. "Single sales have slumped since those days – to the point where Pokemon, computer games and the internet have drawn attention away from records," muses Roachford. "I have always sold a good deal of albums without concentrating on singles as much. People therefore assume that I'm not selling, but that's misleading. If I had to give any advice to aspiring musicians wanting to make the grade, it would be to think about albums as much as that gimmick or song hook giving you a breakthrough.

"To be honest, people are bored with music a little bit, which should necessitate that record labels, artists and musicians try harder. However, it doesn't work that way and companies tend to play it safer these days,

Derek Santini/Columbia

Living proof that it's possible to succeed in the music biz with old skool principles

James Cumpsty

Roachford's Otari recorder banishes the 'ouch factor' from his recordings

"The digital thing is not very giving, nor satisfying – to my ears, anyway. It sounds like a brand-new leather jacket that hasn't been broken in"

with mixes covering all tracks. I'm not against the remix concept, because I believe it's a good breeding ground for aspiring producers, and the cross-referencing is healthy. However, I still lean towards definitive versions, being the old skooler that I am. Call me old-fashioned."

This is undoubtedly a man of musical principle. Indeed, the word on the curb was that Roachford turned down no lesser figures than Jam & Lewis when it came to recording his second album, *Get Ready,* in 1991. This is one slice of hearsay that turns out to be correct. "It was around the time they were having success with Alexander O'Neal and Janet Jackson's 'Control'," confirms Roachford. "There was this Sony bash, and I got up and decided to play some piano. They were like, 'Who is that?' They came up to me and said, 'You've got some talent.'

"They offered me a project that would allow my sound to remain as is, and I was tempted – especially given that they were doing the Human League album at the time. However, I always wanted to be recognised as a producer in my own right, so I declined. I love all those kitchen sink 808 and 909 drum tracks, but it wasn't what I was looking for."

Yet this spirit of independence doesn't stretch to a number of Roachford's heroes and undoubted influences. First up, Sly Stone: "I wrote 'This Generation' in the vein of 'Family Affair'. I used a Wurlitzer, which, for the uninitiated, is a poor man's Fender Rhodes. There aren't that many of them knocking about, but I've got one. Actually, my old manager, Steve Fargnoli, used to manage Sly, and he told me that Billy Preston played Wurlitzer on the 'Family Affair' session, and that Sly got that wonderful vocal drawl by virtue of the fact that he recorded the vocal off his face lying on the floor of his studio! I tried it once and ended up choking, so I never tried again! Only joking, but it's a wonderful irony – one of those stories that makes the legend.

"Phil Lynott is another hero. It was ground-breaking for a mixed-race artist to do something that wasn't done a lot by people of mixed race coming out of the Emerald Isle! His voice was so pure. Testosterone-fuelled, yet smooth and soft. Songs like 'Only To Be With You' and 'Cuddly Toy' were definitely influenced by Thin Lizzy, as much by the band with Gary Moore's guitar as Phil."

Unsurprisingly, Stevie Wonder, surprisingly, Marc Bolan and, soulfully, Al Green also feature amongst Roachford's list of influences. His recording techniques shed further light: "I use a Nord Lead to approximate all those '70s Moog sounds and early '80s Juno sounds. I don't have a lot of analogue equipment as such, but I do have an old Otari Mk III 2" tape machine. Martin Phillips has co-produced a lot of my material – in terms of the technological and engineering side of things – and there is so much of a difference when he puts stuff on tape. It sounds more in time. When you have two things happening in the same space with MIDI, one has to take priority, so you find things slamming a bit out of time. Whereas tape loses a lot of that hardness, and frequencies you don't really need. You know, the ones that make the human ear go, 'Ouch!' Tape smooths it off – wicked!"

Remaining, briefly, in analogue heaven, Roachford summates "I use a lot of valve gear: Summit TLA stuff and a U67 valve mic to get the old sound – that old, crusty Al Green-esque vocal. Al wouldn't be Al if he'd recorded digitally. Willie Mitchell wouldn't have achieved that classic sound."

Coming full circle, what about that intriguingly-monikered debut single? "We recorded 'Cuddly Toy' live. It was a jam originally that I'd written as a piss-take of my keyboard player and his bad chat-up lines. Muff Winwood – Stevie's brother – wanted me to record it as 'Feel For Me Baby', but I wasn't having any of it! They were reluctant to release it until the sheer weight of my live fan base demanded it. In fact, an A&R man actually told me that they didn't know how they could market a black guy doing rock. Anyway, we were the darlings of the university circuit so, as so often happens, the kids determined the marketing strategy. We had such a strong university following that I called us 'The Polyfillers'!"

selected kit list

SAMPLER

Akai MPC 3000

SYNTHS/MODULES

Clavia Nord Lead

E-mu Proteus 2000

Roland JV-1080

[illegible]

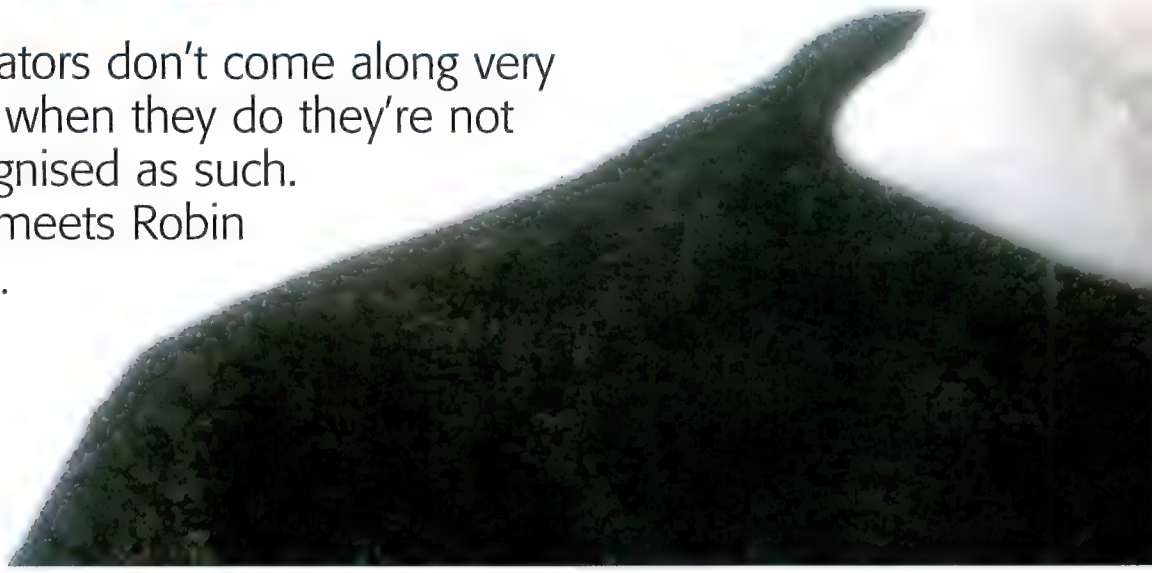
Mackie 32-channel desk

Neumann U67

Otari MTR90 Mk III 2" 24-track

Stop. Scanner Time

True innovators don't come along very often, and when they do they're not often recognised as such. *Oz Owen* meets Robin Rimbaud...



Telephone terrorist, minimalist anti-hero, scavenger of the electronic communication highways... you'd be forgiven for thinking we're on the trail of Carlos the Jackal here, but no – these are just a few of the labels Scanner, a.k.a. Robin Rimbaud, has acquired over the last decade, largely the result of his left-field experimentation with digital media.

Left-field, y'say? Well, given that the key to over a dozen albums and live projects since '92 is an unimposing piece of kit going by the name of a Lowe AR300E, otherwise known as a scanner, *hell* yes – this is left-field.

The Lowe may look unimposing, but in execution appearances can be deceptive, used, as it is, to sift the airways and frequencies, and ultimately extract sounds, interference, dialogue... anything that can be woven into an aural collage of sounds and beats, noise and found conversations.

And on top of the back catalogue, Rimbaud has had his work aired through exhibitions, radio, clubs and documentary films. Strange then, that it's taken almost a decade to embark on his first national tour, titled 'Diary'. And given that the Scanner alias of Rimbaud is, er... 'unconventional', shall we say, there's got to be an irregular twist.

And sure enough, there is. Not only will Scanner's usual loose sense of performance be in evidence, but excerpts from his life since the age of 12 will add to the collage, read aloud by the man himself, contributing to that atmosphere of uncertainty and chance that becomes as much an instrument in the hands of Rimbaud as the scanner or sampler.

"I'm not a jukebox, and I never play my records back - I can't do it. I make them in the studio and I can't do that live unless I take the studio out with me, which is fairly impractical.

"My live gig is quite interesting. Basically I take two or three MiniDiscs out with me, a keyboard, a sampler, a hand-held Theremin, a little short-wave radio, and a scanner. Then I just improvise. And on the MiniDiscs I have a series of rhythms or textures, so I have

something going on at about 128bpm, then I have another loop on another MiniDisc, and then another one, all running at the same speed.

"Then I optimistically press 'start' at the same time and try and get them in time. Then I press start on the keyboard, and I try and get the rhythm - the bpm, I just try and improvise around it. So my shows can be very loose. They can be very, very abstract, or, alternatively, very, very rhythmic."

Taking the studio out on the road may be impractical, but the set-up used to get 'that Scanner sound' is as minimal as some of Rimbaud's creations, comprising few, yet pivotal, pieces of gear.

"I have a very small set-up at home, and in fact the equipment I use hasn't changed much over the years. I've been using a laptop for the past couple of years though, running Logic Audio 4.5. It's such a handsome system, not only aesthetically, but it's just a simple system to use. And I like it because I know there's so much depth in there that I don't even dare to get into yet, but it's just a really inspired little program.

Minimalist anti-hero Scanner - his compositions are occasionally as minimal as his kit list

"I'm not a jukebox, and I never play my records back. I make them in the studio and I can't do that live unless I take the studio out with me, which is fairly impractical"

"I use it for audio editing, but I especially use it for gigs – I travel a lot, so it's the most perfect system to run on my laptop. I'm using a lot of shareware stuff as well, which I like to play with. I've been using a lot of weird things like Thonk - it's a free shareware thing, and you can find it on any search engine. It's a great little program; it's really small, but it basically does granular synthesis.

"There's another one called MacPod, which does pretty much the same thing. And GRM Tools I've used for some time. You can freeze sound in time, you know, and have a rhythm playing and then you can suddenly freeze another rhythm and just move it through the mix. I've always liked to play with those kinds of things.

"In terms of hardware and outboard, I use next to nothing really. I still use the JV-1080. I've been using that since it first came out. I've also got an Alesis Quadraverb and a Behringer Composer.

"I also use an Akai S1000. I've used it for ten years now and I love it. A couple of years ago I tried using an E-mu sampler, but I just couldn't get my head round it at all – it's like learning a new language. The Akai I can work beautifully, and that's just it, it's how different people work. Another thing that I've used for years which I don't use so much now is a wonderful DigiTech Time Machine, from the days when I couldn't afford a sampler. It was really the only way I could make sounds loop.

"The first two or three records I made were made entirely on a Fostex 4-track and this Time Machine. So I'd literally record a track in, try and make a rhythm on it, and hope that it would loop in time, and then keep pressing trigger to keep another sound in time. It worked for at least three albums of mine.

"So my system now is a mix of old analogue effects units and stuff, using some very reliable software, with a PowerBook where I can store loads of hard disk recording so I can do my editing when I travel as well. Doing things that way I kind of get the best of both worlds."

selected kit list

- Logic Audio 4.5
- Mac PowerBook
- Akai S1000
- Roland JV-1080
- Alesis Quadraverb
- Behringer Composer
- DigiTech Time Machine
- GRM Tools
- Thonk
- MacPod

Windmill Lane

It's been the recording home of U2, Rolling Stones, Spice Girls and a host of other pop luminaries. But what gives this Irish studio that extra edge? *The Mix* travels to Dublin to find out...

rates

standard rate £1,200 (Irish) per day

words **Oz Owen**
photography **Ramon Szmichowski**

Once again, strictly in the interest of professional journalism, we at *The Mix* have gone to exceptional lengths to bring you an insight into the world of the professional recording studio. Our destination this month is Dublin, one of Europe's most charismatic capital cities.

But there's no time to take in the atmosphere, the history, the effervescent charm, or any local beverages. No, first thing's first, so we head straight to Ireland's premier recording facility, none other than Windmill Lane Studios.

Originally housed in Windmill Lane (hence the name), the studio has been running since 1978, but an imposing Art Deco structure on Ringsend Road has been home to Windmill for around a decade now. Quite a fitting twist for the building that has played host to a generating station for the Dublin Tram system, a Bovril factory and a snooker club.

Windmill Lane has enjoyed considerable success. The multitude of gold and platinum disks in the entrance hall pay tribute to the seemingly never-ending stream of world-class talent that has passed through its doors to make use of the extensive facilities, the wealth of recording knowledge, the benefits of in-house maintenance and the laid-back, yet professional attitude of all who work there. And let's not forget the nightlife on offer just minutes away.

The studio is jointly owned by one-time rivals Brian Masterson and Andrew Boland, who happily take on dual roles as Company Directors and Head Engineers, leaving much of the day-to-day running of the facility to Studio Manager Catherine Rutter. For some ten years now, Brian and Andrew have split the time behind the mixing desk, and between the two of them have produced some of the greatest acts of the '90s, a tradition they're keen to carry on into this millennium.

"We were each other's main competitors," Andrew explains, "and it was pretty fierce competition at the time. So we thought maybe the logical thing to do was to join forces. We chose the Windmill Lane name because it was already fairly famous and carried a lot of goodwill from clients.

"It wasn't easy in the beginning. This building, for one thing – it's a very big building to just have a studio on one floor, so we quickly developed the rest of the building and put in a second studio just to try and create enough income to effectively support the place. So, it took a couple of years, but fortunately we were very busy."

Given the size of the building, it's no surprise to find a live room of mammoth proportions – 237 square metres, to be precise. As with many things in life, it seems size *does* matter, as Brian testifies. "It's a big room, and I think there aren't very many big rooms left in Europe. The whole studio is designed around getting a really good acoustic – not just acoustic music, but the right acoustic environment for recording drums or roaring guitar solos.

"That's how the building developed. We've done a lot to it since then, though. We've changed the equipment – everything is completely different, everything's changed, as I suppose things do in any other business."

But none more so than the fickle world of the recording studio, where today's studio essential so easily becomes tomorrow's door-stop. "The first

So you wanna be a studio assistant? We get the bottom line from Studio Manager Catherine...

"First off, there's nothing better than studio experience. It is hard to get that experience, though. We get hundreds of CVs sent to us, but generally we don't choose assistants from CVs.

"Sometimes we will take on people that have had experience in smaller studios, but usually, we will initially hire someone as a runner. They make tea and stuff, do the shopping, cleaning, and anything that needs doing, really. Runners are on the bottom rung for a year or so, then they can make the step up to assistant.

"At that point – whether they've taken the route of runner-to-assistant or come in as an assistant from another studio – they assist with either Andrew or Brian, or one of our in-house engineers for a long time before we put them in with a visiting engineer. They have to know the ins and outs of the studio, inside and out.

"A lot of recording schools now have in-house studios, but there's no point coming in straight from a course thinking you're going to be an assistant if you've never lined up a tape machine.

"I would never, ever take someone straight from a course to go in as an engineer. A few years ago, I was interviewing some recent graduates for a runner's job. When I told them what the job was about, all of them were like 'Oh no, I'm an engineer.' I'm not technical, but I was saying, 'Ok, tell me how to do this, or that'. They were like 'Um, err, well... I've read about it!' Not one of them would even consider being a runner – they thought they had the experience, having paid the money and done the three-month course. They thought they were ready for action.

"There's a small studio in Dublin that runs a course. They take the best people from their course and put them into their studio. The course is really good and they get good hands-on experience.

"So many people now want to get into the music business, however they can, but they've no real idea of what it's about, especially at this end, in the studio. There's a lot of hard graft involved, but none of us would give it up.

"I have ultimate respect for those people who spend their lives in the control room. It's hard to stay in touch with friends and family, or to have any kind of relationship."

Studio Manager Catherine Rutter, with Directors/Chief Engineers Andrew Boland (L) and Brian Masterson (R)

recent clients

- Christy Moore
- Clannad
- David Bowie
- David Gray
- Depeche Mode
- Five
- Gabrielle
- INXS
- JJ72
- Kylie Minogue
- Marianne Faithful
- Mark Knopfler
- Metallica
- PJ Harvey
- Rod Stewart
- Rolling Stones
- Spice Girls
- The Corrs
- The Cranberries
- The Fugees
- Tom Jones
- U2
- Van Morrison

» major upgrade was the (Neve) desk, and then we changed nearly every piece of equipment, as you do, to keep up with technology and clients' requirements," explains Andrew. "The big decision was *not* to go digital a few years back – digital tape, anyway – and I think in our case it was actually listening to stuff and forming opinions about where the technology was at the time. I still think it was the right decision, even now."

Brian takes up the reins: "The Studers we have are great. It's difficult to compare a digital multitrack with the Studers, but we once had a big orchestral session on; really it was two sessions, back-to-back: one for an American client who insisted on digital recording, and the other for an Irish client who was happy to go with our recommendations.

"Everything else stayed the same – the orchestra, the musicians, the mics, except on one session we were using a digital machine and on the other we were using the Studers and everybody heard the difference. Those Studers are great.

"Having said that, we've very much embraced the whole Pro Tools concept. But for multitrack recording we prefer to initially record on to analogue and a lot of our clients are the same. That's the thing about a lot of our clients: they like the room, they like analogue and they like the Neve. It's a combination of the three which is pretty powerful, and, of course, you have to be able to hear everything clearly."

And taking a look at the monitoring on offer, there's a pretty comprehensive set of options in Studio A, not least of all a mighty pair of Genelecs. As Andy tells us: "Those are the only set of big monitors I've ever been able to listen to and be comfortable with."

"It's the high frequency definition that doesn't take your head off like most loudspeakers do," adds Brian. "And the bottom end is so big as well. I've even got the 1029As with the subwoofer at home. Without the subwoofer they're a little bit limited, but once the subwoofers are in it's amazing."

The Windmill Lane crew swear by the sound of their three Studer multitracks

And with so much gear available to them, a natural question is: what would you least like to be without? For Andy the answer is clear: "Well, for me it's mics, they're your best friend really. The older I get the more important I think mics are – the difference can be so dramatic. One of my favourites has to be the Sennheiser MKH80.

"Something grabbed me when I went to the APRS in New York at least 10 years ago: there was this guy who did a lot of Michael Jackson's albums, who was giving a lecture. His main thing was that he bought all his Neumanns and other mics, and he never let anyone else use them. He carried them to every single session and still does. They're his mics and he knows nothing's ever been done to them; he makes sure they're in perfect condition. That really hit me when he said that,

The massive live room has provided a top-notch acoustic environment for recording some of the biggest bands in the universe

– as long as he had his box of mics he didn't care.

"We've always had a very good selection of mics. I suppose we come from the school of a good acoustic environment and good-quality mics placed correctly in front of good musicians. You don't need to rely on as much technology, which is ideal."

For Brian, it's the opposite end of the spectrum, at least as far as size goes: "Well, after the Neve, it's got to be the Studers".

But gear, as anyone can tell you, is only a small part of the equation, as Brian's keen to enthuse. "The most important factor is that indefinable thing that happens when musicians play together, which is how it's always meant to be and how it always has been. There has to be that connection between people, there has to be that little bit of adrenaline, that feeling that we're going for it and we're all playing together. What you get at the end of that process is something that really stands up and has great integrity.

"None of us really know what the end listener really hears, because it's impossible to project yourself into that situation. Working in the studio you get so close to it and so microscopic sometimes, but if I have any guess at all, I think what they hear is the feeling – not the technical excellence, not that it's absolutely in tune, not the absolute nth degree of timing… what they hear is a feeling. You hear it in all the great records that have ever been. It's that idea of people connecting and putting across something special."

And who can argue with that? In this day and age of affordable equipment, when practically anyone can get good results with some well-chosen bits of gear, perhaps now more than ever it's that little bit of magic in a performance that hooks us in, the engaging sound of a collection of people working together to create something that is greater than the sum of its parts… But that's a different story, and we're in Dublin for the weekend, so it's time to get the Guinness in!

More from: Catherine Rutter, Windmill Lane Studios, 20 Ringsend Road, Dublin 4, Ireland
Tel: +353 1 6685567
Email : catherine@windmill.ie
Web : www.windmill.ie

selected kit list

Console
Neve VRP Legend 72 input
Recording
Studer A827 24-trk (x 3)
Tascam DA 88 (x 2)
Pro Tools 24 Core System
Digidesign Mix Farm
Digidesign Vintage Farm
Monitors
Genelec 1099
Meyer HD-1
Yamaha NS10-M
Outboard
Tube-Tech LCA 2B
dbx 160X
dbx 160
Urei 1176LN
Urei 1178
EMT Plate
AMS RMX-16
AMS DMX 15-80S
Lexicon 480L
Lexicon PCM 70/80/90
Rupert Neve 9098
GML 8200 EQ
TC Electronic 2240
TC Electronic M5000
Eventide H3000
Microphones
AKG 414EB, C12, D112, C451
Neumann U87, U67, U89, U47, TLM170, KM84, 149
Sennheiser 421, MKH416, 441, MKH80
B&K4006
Beyer M88
Earthworks TC50K
E-V ND408, PL6, RE-20

Mastering Logic

MIDI Manipulation

Delving deeper into Logic Audio, we take a look a several useful real-time MIDI manipulative tools

words **Stephen Bennett**

MIDI data is just numbers. And where you have numbers, you can do mathematics on those numbers. Logic Audio provides several tools for manipulating MIDI data to generate effects and transforms – in real-time. The tools for performing this manipulation mostly reside in the Environment. These are the modifier objects. To explore these, first create a new layer in the Environment. Then from the New menu, add the modifiers as detailed below. For the purpose of demonstration, we have also added MIDI monitors to see some of the effects the modifiers have on the MIDI data.

The Transformer

The Transformer does what it says on the tin – it transforms one type of MIDI information into another. The Transformer object works on the conditions you set up, and then operations are performed on the data. In Fig. 01, the top line of the Transformer window shows the conditions, the bottom line the operations.

Fig. 01 shows a Transformer inserted between a Multi Instrument and the MIDI interface. Whenever the sub-channel of this Multi is selected in the Arrange window, data played by this instrument will be processed by the Transformer. The Transformer window is opened up by double-clicking on the Transformer object itself. The Transformer works by selecting the MIDI data to be transformed using the Status, Cha and other pull-down menus.

What actually happens to the data is selected using the large pull-down menu at the top of the window. The items in this menu allow you to process all selected events, process all other events than those selected, copy matching events, and so on. So, for example, in Fig. 01, the pitch of notes on MIDI channel 1 are being increased in pitch, or transposed, by one semitone. You can see the effect of the transformer in the 'before' and 'after' MIDI monitors. The 'Thru' setting allows MIDI data to pass unaffected. You can rename transformers by double-clicking on their name in the Parameter box when they are selected.

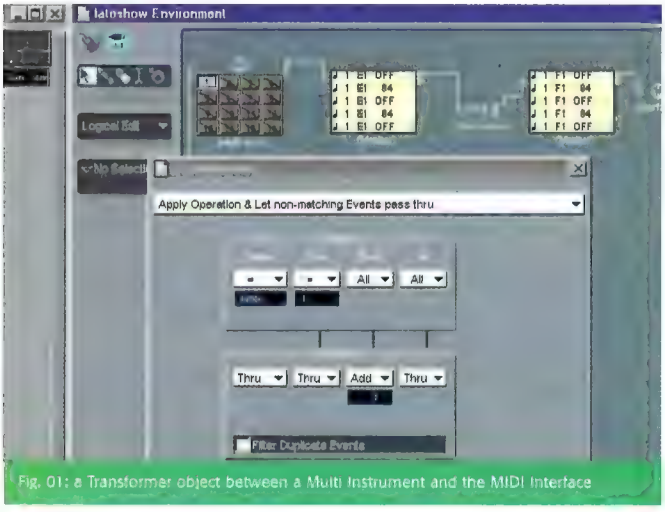
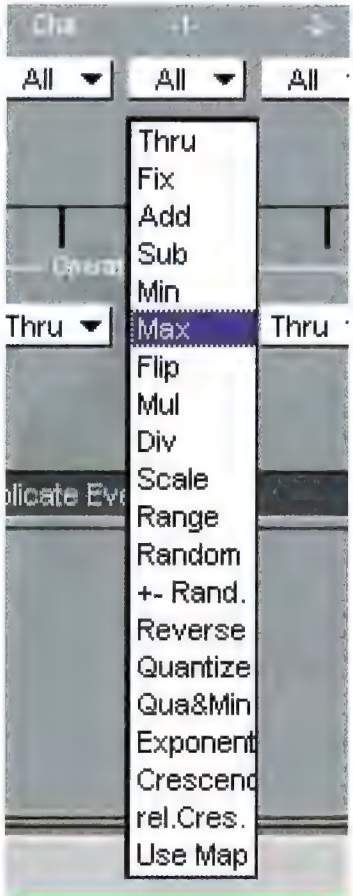


Fig. 01: a Transformer object between a Multi Instrument and the MIDI interface

Another use might be to increase the velocity in real-time in the same way. If, for example, your puny fingers can't squeeze out the full volume range of your 'lead weight' master keyboard, you could add velocity values with a Transformer object.

If you change the Status parameter to 'control' you can manipulate controller data in exactly the same way. In this case, the Pitch and Vel conditions are replaced by two byte values for that controller. You could also convert incoming MIDI data from a foot pedal to punch in and out of recording.

Of course, you can manipulate the MIDI data in other ways than simple addition. Fig 02. shows a list of the possible transforms available. Don't be afraid to experiment. As with many aspects of Logic Audio, things are a lot simpler to do than to explain.



02: the transforms available in Logic

Logic Audio also has a Transform window in the Windows main menu. This works in a similar way to the Transformer object, but it allows you to modify MIDI data contained in a whole sequence or group of sequences. It also has some 'pre-set' Transforms, such as Transpose, Velocity Editing, Pitch Change and Reverse. These are selected from the pull-down menu over the 'hide unused parameters' checkbox. Using this checkbox stops you from accidentally changing parameters and makes the settings easier to understand! The Transformer window allows you to either just select the notes that are going to be transformed, or to select and then manipulate the data. It also has extra transforms that operate on the note lengths and sub positions. You can select which bars are transformed or excluded. You could, for example, change all the B flats in a sequence to G sharp – instant Frank Zappa!

The Delay object

Delay objects are inserted in a similar way to the Transformer. The Delay object works by copying and repeating MIDI data to simulate an analogue or digital delay. The parameters for the Delay object are displayed in the Parameter box when the modifier is highlighted. Fig. 03 shows the Delay object inserted into the signal flow. You will notice that the MIDI data flow is set up in a different way here than in Fig. 01. We've created an Instrument object, renamed it 'Delayed organ', connected that to the Delay object and then on to the Multi Instrument and MIDI port. Selecting the Instrument in the Arrange page will allow you to hear the effect of the Delay object on the MIDI data. Note that the Delay object will only work if the sequencer is running in the same way as the Arpeggiator object described below.

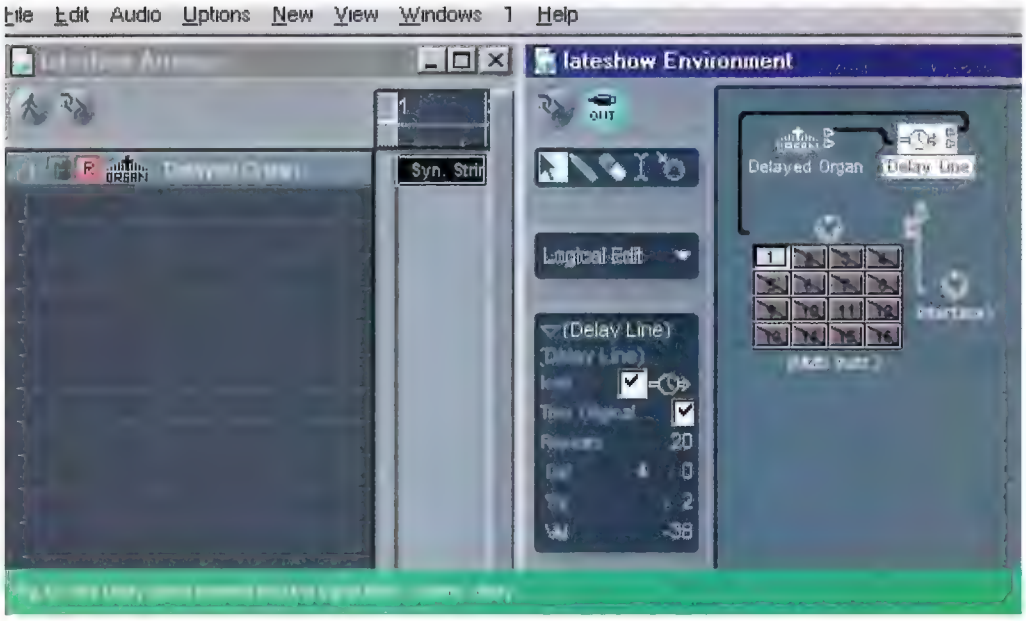


Fig. 03 also shows the parameters that can be adjusted to modify the effect. The Thru Original parameter allows you to hear the unmodified playing, along with any delayed data; Repeats are the number of repeats played; Del sets the delay time between individual delays in Divisions (left value) and Ticks (right value); Trp allows you to transpose the repeats; while a negative Vel value allows repeats to fade in volume and a positive value allows them to get louder. The only limit is the polyphony of the attached MIDI device – a single monosynth won't give you many repeats, unless they are not overlapping!

The Arpeggiator, Chord Memorizer and Voice Limiter can be inserted into the MIDI data flow in the same way as the Transformer and Delay objects described above. So let's take a look at these in more detail...

The Arpeggiator

The Arpeggiator works in a very similar way to the Delay object. Parameters are changed in the Parameter box when the object is selected. You can repeat notes in ascending and descending patterns, and choose velocity and transposition values. It's a fully-specified arpeggiator that really does compete with the ones on dedicated synthesizers, such as the Roland Jupiter 8, and, of course, it's always in time with the track, should you so desire!

Voice Limiter

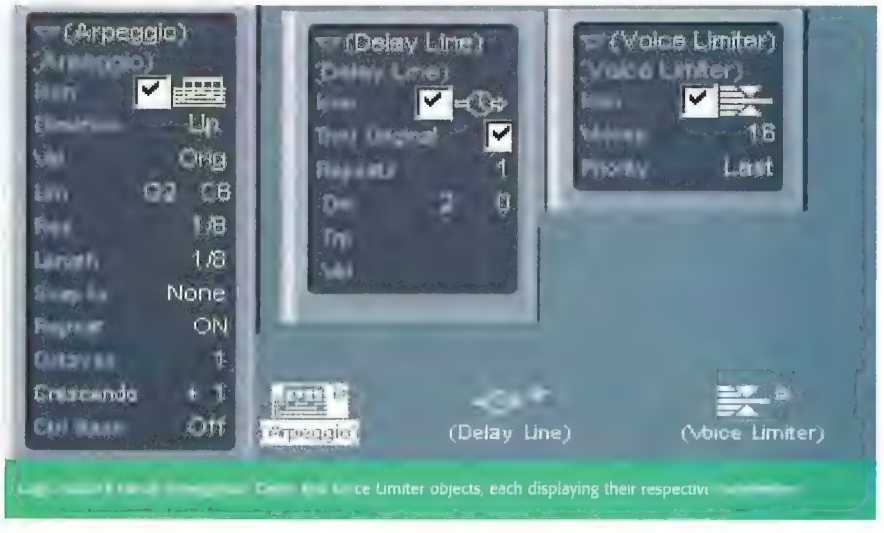
To avoid notes being lost when playing a MIDI device, you can insert the Voice Limiter into the MIDI data path. It's a simple object: you set the maximum number of voices that the MIDI device it's connected to can play, and the note priority. You'd probably want to set it up in the same way as the Delay object and call the Instrument you'd use in the Arrange page something like '2-note limited Moog'.

Chord Memorizer

Double-clicking on this object opens a window containing two keyboards. On the top one you choose (either by clicking on the keyboard or an attached real MIDI keyboard) the note you wish to play. On the bottom keyboard, you assign the chord that will actually be heard when the single note is played in the same fashion.

Faders

Faders in Logic Audio don't just fade. They are controllers that can output, and respond to, many types of MIDI data. For example, you could use Faders to send out Controller and SysEx information to manipulate external MIDI devices. Or you can use them to create virtual mixers for mixing. The parameters for each fader are set in the Parameter box when a fader is highlighted. You can also connect these faders to Splitter objects, select those in the Arrange page and record the fader movements into Logic Audio. This data can then be edited just like any other MIDI data.



There we have a brief outline of the way Logic Audio can manipulate MIDI data. As we have learned, Logic rarely has fixed MIDI data paths – the user usually has to connect something to something else to utilise these features. This explains somewhat the program's reputation as being 'difficult'. But remember: if you set up these modifiers and instruments in your Autoload song, they will be ready for use next time you boot up Logic Audio.

Mastering Cubase

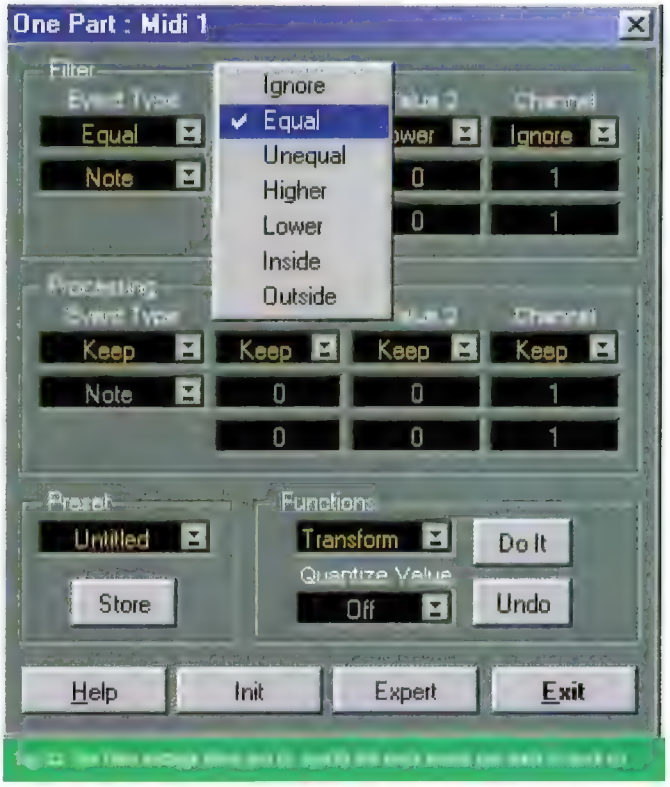
The Logical Editor

It may appear complex at first, but if you're not using the Logical Editor, you're doing many things the long way round...

words **Adam Crute**

There are many great paradoxes in life: when we go to bed at night we can't get to sleep, yet in the morning we can't wake up; those most capable of getting elected to power are often those least suitable to hold such a position. And, first and foremost, one of Cubase's most powerful editors often stays unused at the bottom of a menu due to its apparent complexity, yet is called the Logical Editor. All right, it's not the sort of thing that would keep you up at night (or, if it is, you really *do* have something better to be worrying about). But if you use Cubase and don't use the Logical Editor, I guarantee you are doing many things the long way round.

Getting the most from this editor does require a basic understanding of MIDI and how its messages are structured, but as MIDI is a subject that can fill a book – or many different books – we won't go into it here, and will assume that you have a basic knowledge. The best way to describe the Logical Editor is as a kind of 'MIDI calculator' used to mathematically manipulate raw MIDI data. This could be for a simple task, like selecting all the instances of a particular note in a part, or for more creative uses, such as transforming note data into a controller message for a filter bank.



At first glance, the editor can be a bit baffling, with lots of drop-down menus and fields labelled, rather vaguely, as Value 1, Value 2, and so on. Thankfully, there are two modes of operation: Easy and Expert. We will look at the former first.

When you open the editor (see Fig. 01), you will notice that it is split into three distinct areas: Filter, Processing and Functions (Preset is just for storing settings for common operations, so it doesn't count). The basic principle here is that the filter is used to specify the MIDI events that will be passed along for processing. Here, mathematical functions can be set – or not, as the case may be – and applied to these MIDI events in the manner dictated by the Functions settings. The meaning of the Value 1 and Value 2 fields varies, depending on the type of event being edited. You see? I told you it was logical! Let's move on to an example...

Example 1

To achieve a useful result from the editor, you need to have an aim in mind before you start fiddling with the settings, so record a MIDI part into Cubase. Now, let's say that you wanted to delete all the instances of the

note C3 that have a velocity value between 30 and 50 from the new part (hey, it's just an example, right?). Clicking the Event Type drop-down gives three choices: Ignore, Equal and Unequal – select Equal. You can now access the drop-down, just below where you select the event type to be processed – for this example, select Note. You've just told the editor that you only want it to deal with note data and nothing more. (Leaving this field on Ignore would mean that *all* event types – modulation and aftertouch, for instance – would be passed on to the next stage of the filter. Selecting Unequal would mean the editor was to deal with everything *but* note events.)

The next field is Value 1. For a note event, this means the MIDI note number (and this is where the basic MIDI knowledge comes in handy). This time we have a greater choice of filter types to chose from (see Fig. 02), and all are self-explanatory – again, select Equal. Now we can enter the value of the note we want to deal with, either with the mouse or by manually entering the value. For this example, set the value to C3, or MIDI note number 60, as it will appear in the field.

For a note event, the Value 2 setting represents the note's velocity. As we have decided we want to delete velocities between 30 and 50, we need to use the Inside filter. Now the second numerical field has become active: set upper and lower settings to 50 and 30, respectively. Because the event we are dealing with has been recorded from a single source and doesn't contain events on multiple MIDI channels, the last field can be left as Ignore – if you are dealing with multiple parts, however, this can be useful.

Have a glance back through the settings. We have now specified what events to delete. All that remains is to select the Delete option from the Functions drop-down menu (see Fig. 04) and click the Do It button. The logic should be becoming clearer now…

Example 2

On to the Processing section: let's say that you had programmed a drum part using a single sound module as the sound source. Now you want to lift out all the events in the hi-hat line that have a velocity greater than 90 and send these MIDI events to a sampler that has a better loud hi-hat sound. The problem is that on the sound module the hi-hat was assigned to note F#1, yet on the sampler it is on C2. To make matters worse, the sampler's hi-hat sound is more sensitive to velocity values than the one on the sound module. (Well, it's more feasible than the last example!)

Use your new-found knowledge of the Filter section to set it up appropriately – check Fig. 03 to see if you got it right. All the processing fields default to Keep, meaning no processing will be carried out on the data. Have a look through the drop-down menus and see what options are available – again, these are self-explanatory and, on the whole, are simply basic arithmetic. For our example, to change the note number from F#1 to C2 (MIDI note number 42 to MIDI note number 60, in other words) is nothing more complex than setting the Value 1 drop-down to Plus and setting the numerical field to 18.

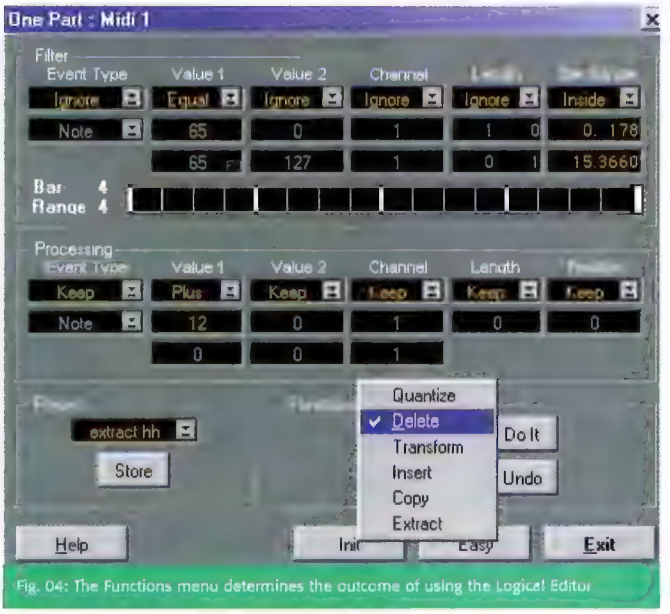


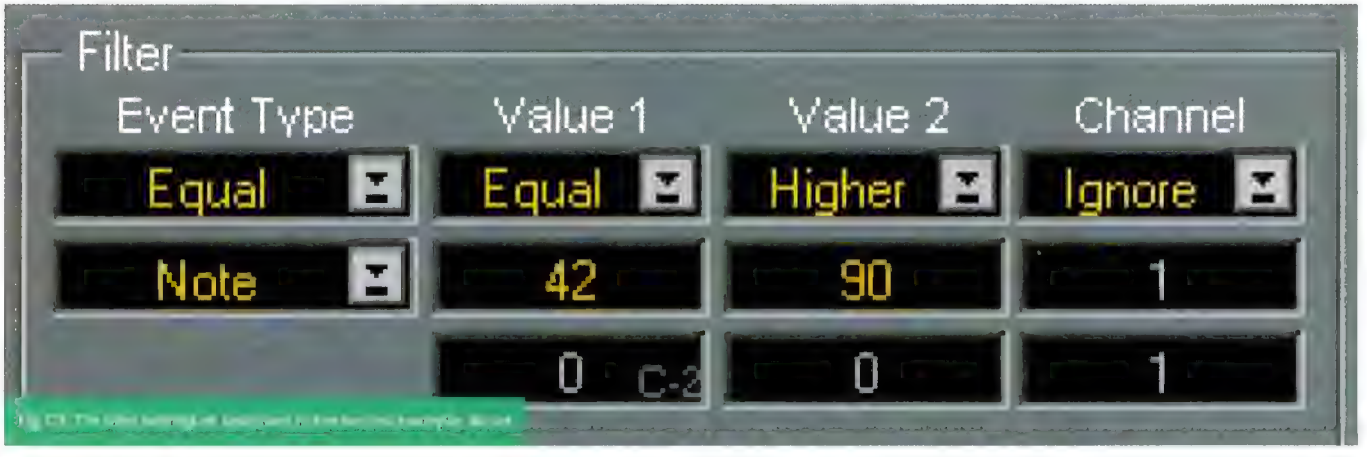
Fig. 04: The Functions menu determines the outcome of using the Logical Editor

There are various approaches to changing the velocity value in this example: you could use subtract to reduce the velocity data by a set amount; divide by two to half all the velocity values; or use the Dyn option to constrain the velocity value between an upper and lower limit, yet retain the relative difference in velocity. To finish the operation, choose Extract from the functions menu and click Do It. A new part will have been created in the Arrange window containing the new notes, all transformed and separate.

Cubase 5 users, however, will be disappointed to find that the Extract function has been dropped (this is probably an oversight rather than a conscious decision to drop the function – so these users would need to perform an operation like this in two stages: use the Select option to select the notes, then cut and paste them to a new part. This part can then be processed with the Logical Editor's Transform function.

Once you get the hang of the Easy side of the Logical Editor, have a look at the Expert settings. The new fields of Length and Bar Range add a whole new range of useful functions – the method of operation remains the same as for the Easy side of the editor.

Hopefully, I've managed to make the Logical Editor seem somewhat more… well, logical, really. The more you use it, the more sense it will make.



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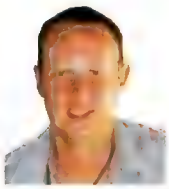
a&r dept

The Mix and our panel of record industry experts deliver the verdict on your demos. Love it or hate it, these guys always speak their minds...

Luke Cunningham
Label Manager,
Freedom 4



Andy McIntyre,
A&R,
Mushroom &
Infectious Records

Sam Winwood
A&R,
Sony S2

Sil Willcox
MD,
Cruisin Music

BIG 3
DEMO

TM: Jamiroquai with a bit of Toploader thrown in for good measure. These guys and gals have got some pretty elements at work here: the voices work well together, and I could envisage the female contingent finding some success with the right producer, label or songwriter. Maybe that could be these guys, but, for now, it's all too confused and lacking direction.

Andy: Un-dynamic jazz/funk – who'd have thought it? Every lyrical cliché from this genre is in here, too. If you don't like Galliano or Jamiroquai, you won't like this. And if you do, you won't need it.

Sam: Sorry, this track just bored me silly.

Luke: Acid jazz-inspired with Jay Kay, Toploader and Galliano all in there somewhere. Accomplished, but too derivative.

Sil: Top marks for effort in the harmonies, but, as far as the song goes, the dated sounds let it down.

More from: Keith Walker Tel: 020 7729 4251

GIANT KIND
DEMO

TM: No sooner had I considered slitting my wrists after listening to Radiohead's *Kid A*, then along come Giant Kind with their own take on suicidal rawk. Yes, emotion is what it's all about, but sheer boredom seems to defeat the purpose. Production-wise, are Giant Kind after a pseudo-Peter Gabriel lo-fi value, or simply not very competent at recording themselves? Whichever – they're being too self-indulgent and can't pull it off.

Andy: All the miserable moments of Radiohead summed up in one five-minute, shoe-gazey, goth drone. This could probably be produced up into something quite sonically staggering, but with such a moody song, who'd want to?

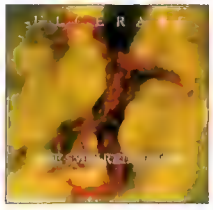
Sam: This track never really threatens, let alone delivers, the menace that it sounds like Giant Kind were aiming for.

Luke: Depressing drone, with little or no song.

Sil: Over-indulgent, dated wank!

More from: giantkind@freeuk.com

ULCERATE
THE SMEARED DEMOS



TM: I've spent a little time recently with Gary Numan, Nine Inch Nails and Marilyn Manson (in glorious audio, of course). And Ulcerate seem to have absorbed an abundance of these guys' latest offerings. Sadly, it's all rather formulaic and needs a serious injection of originality. That said, the production values aren't all bad – they've certainly hit a niche that they know well. Whether it's one worth pursuing remains to be seen, but my gut instinct is that it's not.

Andy: I was trying to work out whether being 'ulcerated' is a good thing or a bad thing, then I realised the song had finished. Nothing here to really grab the ear.

Sam: The Numan-esque idea is sound enough, as is the song, but once again, the production ideas really need looking at.

Luke: File somewhere between Japan and Orgy – a good tune, but terribly derivative.

Sil: Acceptable production, dire material.

More from: ulceratedsounds@hotmail.com

A&R tips

He's listened to thousands of your demos over the years. Now *The Mix* A&R guru bids you a fond farewell with some tips for getting your music heard by the right ears...

Let's face it, record company A&R departments get more hopeful acts' material through their doors every day than they could sign in a year. So just how do you catch that elusive eye?

- Brown jiffy bags containing a ropy cassette and a hand-written note are out for a start.
- Be inventive: think about getting a potential A&R guy or gal's attention by using interesting packaging – anything from a chocolate box to a bright orange envelope sporting stickers of the act's logo stands a better chance of being noticed.
- Address it to the right person at the right company. Phone up the record companies and get the name of the A&R director. Even if it's not their bag, they're more likely to pass it on to the right person than a harassed secretary is.
- Do some label research to find out which genres a particular label specialises in. It's a complete waste of time sending a heavy metal demo to Tidy Trax, for example.
- Sort out your biography. One page of A4 outlining the people involved, what you can offer a record company and why your act is a viable addition to their roster is essential. 'We love this band and if we had loads of money and gear we could be just like them' will be filed you-know-where.
- If done properly, one decent photo, combined with artwork, will set out what the act is about. A polaroid in a pub and a doodle on a cassette or CD won't.
- Identity is all. You've got to have a clear idea of what you want to do. A record company's role is to hone your ideas, so the clearer they are, the more seriously you'll be taken.
- Remember that the 'music business' consists of two words – make sure you think about both of them all the time.

Good luck! • *Michael Stand*

HALO + BLACK
DEMO

TM: According to Halo + Black, they've recorded with Prince and George Clinton. And the two funkmeisters have obviously had a major influence when it comes to the material on offer here, though this has got a very different edge. Opener 'My Sacred' is a weird kind of industrial dance effort, *a la* Nine Inch Nails, especially in the vocal department. This is further highlighted on 'Tonight My Body Feels So Tight': a real *Downward Spiral* attempt, with brooding vocals and a sinister edge that takes you on a journey rather than a trip. In a way, it's all quite cinematic, really. Whether there's a market for this is debatable, but it certainly has an identity that you can't argue with.

Andy: This has real merit as a fucked-up slab of Ween-esque weirdness, but where Ween succeed by deconstructing songs of sublime excellence, the song at the root of this needs to be a lot stronger to successfully carry the production. Totally non-commercial, but by far the most interesting thing in this month's bag.

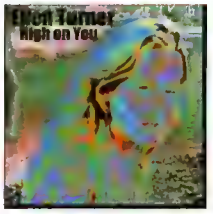
Sam: Dark and brooding, with good production ideas; not my cup of tea, but this track really works.

Luke: Peter Gabriel played at the wrong speed – very odd!

Sil: Halo + Black deserve credit for attempting something that's never been done before, but I think we can see it's never been done before for a reason.

More from: haloblack@hotmail.com

ELLEN TURNER
DEMO



TM: Dunno whether it's just me, the whole record-buying public, or a minority of punters who regularly get miffed with the old cliché of the female 'singer/songwriter', but it's a real concern. And that's not because of any bigotry on my part, but there's a real feel on this demo that nods are given far too easily to the likes of original pioneer 'Kate Of The Bush' and PJ Harvey. Ellen's got a fabulous voice and some rather natty lyrical ideas at work. On the downside, it sometimes appears that she's trying too hard to emulate some heroes. Identity is everything in this game, and Ellen really needs to find her own if she stands a fighting chance.

Andy: The current 'Holy Grail' of the UK A&R fraternity is to find a female singer/songwriter with truly international potential. Unfortunately, Ellen isn't it. "High on you..." is a nice main lyrical hook, but the rest could've been copied straight out of a *Cosmopolitan* feature or Barbara Cartland novel. The vocal is neither outstanding nor distinctive enough to compensate. Lovely acoustic guitar, though.

Sam: Mmm. Nice vocals, nice enough tune, pretty much an all-round inoffensive affair – again!

Luke: A well-written song, but it lacks punch. It needs a different approach, musically, as it's too whimsical at the moment.

Sil: Horrible hippy lyrics ruin what could be an acceptable track, given the right production.

More from: Ellen Turner Tel: 020 8408 1330

WISDUMB OF 3
CHANGES

TM: This kicks off nicely with some soulful(ish) nuances. It's obvious that the guys and gals on board here have a damn strong grasp on what is likely to sell in the commercial arena. That's all well and good, but what Wisdumb Of 3 seem to lack is a really coherent plan for their recording and live future. The bulk of the material here is put together with attention to detail and passion, but it just doesn't hit the mark when it comes to those all-encompassing elements that make a great pop song. You know the old adage of being able to render a great song with nothing more than an acoustic and a vocal? (*Oh no, here we go again – Ed*). Well, it needs to be taken on board here. Commerciality is a big deal, and I'd guess that that's where Wisdumb Of 3 wanna be.

Andy: What a terrible name! Sometimes things that try to be too clever end up making you groan. Unfortunately, this is also true of this band's lyrics. They're delivered in an indistinct karaoke style over a fairly basic production. All very average; I get boxes of demos just like this every week.

Sam: Sorry, I didn't really like this at all. Lightweight pop, with weak production and weak vocals.

Luke: Tedious indie janglings with a hint of Simply Red for good measure. Good song structure, but it's got no soul.

Sil: It needs a lot of work just to be average.

More from: richard.j.graham@iname.com

demo of the month

ART BY MACHINERY DEMO

TM: While this doesn't really push any barriers, it's the most commercially viable bit of funk/jazz we've clocked for quite a while. There's an abundance of smart ideas going on here, including nifty trumpet nuances and funky vocal treatments, as well as very cool Sade-esque vocals – kinda strange in itself, since the ABM crew are from Norway. Anyway, all of that aside, what's on offer here is a mixture of slightly uptight trip hop, with more than a subtle nod in the direction of Soul II Soul supremo Jazzie B, both in terms of production and the intermittent rap vocal that permeates the proceedings. Art By Machinery's main strength lies in their ability to sculpt some pretty impressive sounds from a relatively meagre amount of kit, and have them all sitting comfortably in the mix. This is frequently where a lot of demoists fall down – concentrating on the overall feel and song itself is no mean feat, and it's really concerting that there are still people out there who have the courage of their convictions and stick to what was obviously their gut instinct, musically. And given that this is where most acts fall arse over tit, that's quite an accomplishment in itself. This is well above-average, and certainly deserves some serious recognition for that alone. Now, let's see what our industry bods think of our chosen CD track, 'Moa B'...

Andy: Better-than-average, lounge-y trip hop, with some excellent production touches – especially the filtering on the vocal. The vocal is really nice, and worthy of a full song rather than the few repeated lines it has to work with. I have doubts about the relevance this has to today's music marketplace, but very nice, nonetheless.

Sam: Nice vocals, nice enough tune. Pretty much an all-round inoffensive number.

Luke: Funky, jazzy little number that works well on all levels. Well-produced, good vocals; a current sound in a lot of the more eclectic clubs. Get some other mixes done and send out a dozen test pressings.

Sil: Although this nearly hits the mark, I would love to hear what these people could do in a proper studio. One thing, though – change the name.

More from: stianro@stud.ntnu.no

Thank you for the music
And thanks to our *A&R Dept* sponsors, Pure Distribution, for all those lovely 19 processors that they've given away to those deemed worthy of our *Demo of the Month* prize. To find out about the 19 range, ring 020 7372 6330, or point your browser at: www.pure-distribution.com.

CD info

tracks 02-03
track 02: Art By Machinery 'Moa B'
track 03: PanTone 'Electrified Beats': last month's top demo

help file

Problems in the studio? Ghosts in your machines? Contact the *Help File*, where our team of audio experts try to solve your technical torments

glossary

Auxiliary
A sub-mix output from a mixer, normally used to send a channel mix to an FX processor or monitors. Some mixers have dedicated auxiliary returns that are mixed into the main stereo buss.

Bias
High-frequency signal added to audio for recording onto tape. This helps overcome the inertia of the magnetic coating. The bias signal level required varies according to the tape coating.

Companding
Combination of compression and expansion, and the basis of Dolby noise reduction.

Compression
A process that uses a user set threshold level to activate a gradual attenuation on audio. In this way, high levels are reduced and, subjectively, low levels are increased – hence 'compression'.

Distortion
Any proportion of an output signal that wasn't there at the input, and wasn't meant to be added. This is normally expressed as a percentage of the signal – e.g. in total harmonic distortion (THD).

DSP
Digital Signal Processor. An integrated circuit (chip) used to rapidly process data streams according to an algorithm.

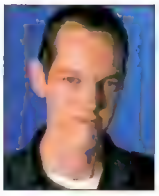
Effects
Any device that alters the nature of a signal, such as a reverb unit, pitchshifter or vocoder.

the masterminds

this month's *Help File* team

NAME: Sean Vincent
OCCUPATION: engineer/producer
CHOSEN SUBJECTS: PC recording, plug ins, digital mixing, *Pulp Fiction*

NAME: Seb Pecchia
OCCUPATION: engineer/producer
CHOSEN SUBJECTS: Pro Tools, guitars, sequencing, effects, *The Godfather*



NAME: Oz Owen
OCCUPATION: *TM* reviews editor
CHOSEN SUBJECTS: Logic Audio, MIDI, filters, the Phattytron, *Withnail And I*

Knee-deep and rising

Q My compressor has variable knee settings on it, ranging by degrees from hard to soft. I understand what each setting means in terms of the effect it has on the signal, but I'm a bit lost as to when I should use the different types. I know there are no rules when it comes to this stuff, but a few pointers would be helpful. What are the best settings for vocals, drums and bass, for example? And are there any other tips I should be aware of?

Lawrence Finlay, Leicester

A Like you say, there are no hard and fast rules, but there are certain ways of adding compression that will give you the 'commercial' sound most of us are striving for. As a general rule, you need to be careful when compressing. Only add compression at the mixing stage, or you might cock-up a perfectly good take by overdoing it. That said, it's usually safe to apply a small amount of compression at the tracking stage as well – just be careful.

'Hard-knee' and 'soft-knee' are terms that describe how the compressor reacts when the threshold is reached. Hard-knee (see Fig. 01) will have a very linear response and cut in as soon as the threshold is reached. Soft-knee (see Fig. 02), on the other hand, would apply the compression gradually the further over the threshold the level goes. Generally, I use hard-knee for bass, drums and anything vaguely percussive, and soft-knee for anything else – especially vocals.

I use a tad of 3:1 ratio on the kick with a threshold of about -10dB, just to even it out a bit. Sometimes I'll add a touch of 2:1 with a threshold of about 0dB on the snare. You can play with the threshold until the snare 'sits' nicely and doesn't jump out at you when it's played harder. I often compress the overheads quite a lot – about 2.5:1 with a threshold of between -20dB and -10dB – just to make it all sound more 'live'.

Bass nearly always needs compressing to keep it

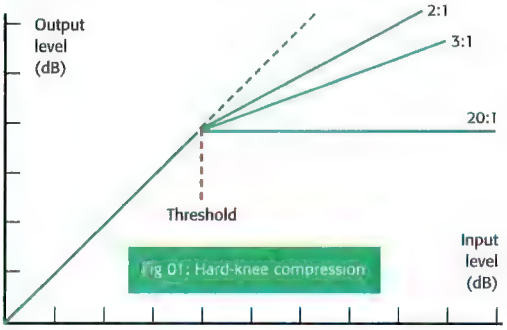


Fig 01: Hard-knee compression

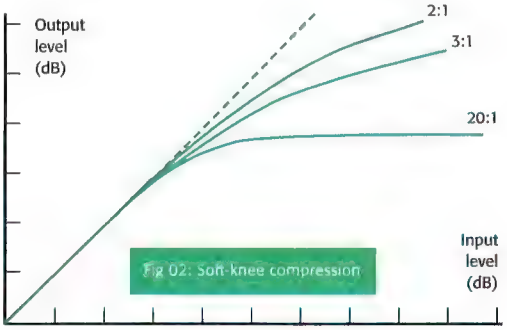


Fig 02: Soft-knee compression

solid at the bottom end of your mix. Try a ratio of 4:1 with a threshold of -20dB. Again, you can play with these settings to get the most natural-sounding results. You want to try and retain the feel of the bassline, without it varying in level very much.

Electric guitars can sound punchier with compression, but don't overdo it. If you lose too much of the dynamics, it loses a lot of life.

Vocals are the most important part of any song, so use the compressor to get them sitting in the mix so that you can hear every word, but they don't dominate everything. Try a setting of 2.5:1 and play with the threshold until it sounds right. Use the gain reduction meter to see when the compressor is working, and don't be afraid to use compression as an effect. Overdoing it can make a performance sound unique.

With all these examples, if your compressor has the ability, try playing with the attack and release controls. On percussive sounds, if the attack is set too slow, the initial 'hit' will get through uncompressed, which can sound odd. On the other hand, you can use this as an effect to achieve that classic 'pumping' sound much loved by dance music aficionados.

Remember, when using compression, if you add another 5dB of level to your sound, you'll also add another 5dB of noise with it. It's a trade off, I'm afraid.

Sean Vincent

Work that sucka to death

Q I'm trying to get a placement at a recording studio in London for my work experience, but I can't seem to find one. Please could you help me by suggesting some recording studios, because I really would like to do my work experience at a place like that.

Dan Nicoll, via email

A What a question! That's like asking 'How do you break into Fort Knox?' It's a question that's hard to answer quickly…

Work experience is, believe it or not, the best way to climb the ladder in the recording studio game. Expect several things:

1. You will get nowhere fast!
2. If you *do* get anywhere, you will get very little, if any, money.
3. You will work harder than you have ever worked in your life.

If you can accept these things, then keep pushing. Write to as many studios as you can – especially if you know people there. Follow up with phone calls, but don't be too heavy. Whatever you do, *do not* preach about how much you know about studio life or recording music. Even if you think you're the hottest engineer going, keep it to yourself and eat humble pie. Big studios want to teach you how their studio ticks and will not take kindly to you doing things your own way.

Expect to work with the technical crew on a work experience spot for a couple of weeks. You won't get into sessions unless you are very, very lucky. Don't be put off by this, as these guys are the foundation stone of any big facility – without them the studio would not function. They have vast experience of the gear, acoustics and of remaining calm in times of stress. Oh, yes, and you will need to know how everybody on the site prefers to take their tea or coffee!

Then, depending on just how willing you are to hang around and clear cable cupboards, you may get a spot assisting on sessions, at which point you will start doing 19 or 20-hour days, seven days a week, for a very low wage. Right, so that's what to expect! Sounds bleak, but if you love the job you'll come out smelling of roses and stale tea. Still fancy it?

Seb Pecchia

Multitrack muddle

Q Me and my band would like to start recording our own stuff, recording lengthy live sessions, then mixing and mastering later. We are made up of drums, bass, one guitar and one keyboard (plus vocal).

I'm not sure I understand all this stuff about multitracking, so maybe you can enlighten me a bit. I may be able to indefinitely 'borrow' a Roland VS-840 – would this help? I am a poor Maltese student so any outboard stuff would have to be within a rather strict budget (£700).

Thomas Cuschieri, via email

A As far as multitracking goes, it's pretty much as it sounds: rather than record to two channels, or a 'stereo' track, many tracks are recorded simultaneously, giving a separate channel for each instrument. When recording to multitrack, it becomes a straightforward job to adjust the relative volumes of each track and add any effects or EQ that might be needed before mixing the whole arrangement down to a stereo pair. In this way there's lots of scope to try different mixes or effects settings, because you'll have the flexibility to do this.

As far as the VS-840 goes, if you can blag it for free, then it would be silly not to! It's a bit old now, but you can record four tracks on it simultaneously and it's got a 100Mb Zip drive for storage – bugger all, in other words, but for picking up some hands-on experience of multitracking, it's ideal.

Then, if you decide it's the way forward, why not think about saving up a bit more and checking out the Yamaha AW4416 or the Akai DPS16, (both reviewed in *The Mix* 82), or Roland's very own bad boy, the VS-1880 (*The Mix* 80). These are much bigger machines with more memory, allowing simultaneous recording of eight tracks (Roland), ten tracks (Akai) or 16 tracks (Yamaha).

Oz Owen

Akai's DPS16: A very nice bit of kit, capable of top quality recordings

glossary

Dynamic range
Ratio of highest possible signal level (peak) to the noise floor. Expressed in decibels (dB).

EQ
Equalisation. Frequency (pitch) selective filtering of audio in order to boost or cut levels inside a specified frequency range (bandwidth).

Frequency response
A measure of spectral colouration introduced by a system. It is usually represented as a graphic plot with frequency and level axes, showing the resulting output curve from a flat input. It can also be expressed as a bandwidth with level variation – 20Hz to 20kHz ±3dB, for example.

Insert
To literally 'insert' an effect or processor into a mixer channel's signal path, usually via a TRS 1/4" jack, where the signal is sent through the tip and returned through the ring, with the sleeve acting as ground.

Interface
Anything that aids interconnection. It could be a screen to a computer user, or the MIDI protocol to MIDI equipment.

Modulation
Where one signal indirectly changes another. For example, the pitch of a note (the mod source) might be used to modulate the volume of the sound being played (the mod destination): so the higher you play, the louder you play.

Multitracker
Any recorder that is capable of recording more than two tracks of audio, and that has the ability to record each one separately.

Outboard
Term used for peripheral equipment that doesn't directly generate or record audio. Includes effects processors, preamps, interfaces and so on.

THE Mix readers' ads

KEYBOARDS

Alesis QS7 76-note synth, £450; Roland XP-80 76-note workstation, both prstinem, with box, accessories and case. Tel Steve on 07802 583242

Korg Trinity Plus V2.0, excellent condition, boxed with manuals, £875 ono; Roland JV1000, mint condition with manuals, £400 ono. Tel Jason on 01253 735972 (Blackpool)

Korg Trinity workstation, excellent condition, never gigged, boxed, with manuals, £700; Yamaha O1V digital mixing desk, as new, boxed, with manuals, £800. Tel Mark on 01234 721731 or e-mail: realside@ntlworld.com

Peavey DPM4 keyboard, with extra 1/2Mb of memory, excellent condition, 9-track internal sequencer, manuals and 100s of samples included, £400 ono. Tel Fiona on 01635 874737 or e-mail: fabmusic@hotmail.com

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Yamaha DJX, brand new, still boxed, manual and adapter included, complete with stand, cost £270, will accept, £150. Tel 01205 356988

Yamaha SY85 keyboard, including bag and extra sounds, £375; 4U rack tray, £20; pair of heavy duty low PA speaker stands, £25; box of 56 single mono audio leads; one mic cable; one 16-way loom; 20 single MIDI leads, £100, including postage; Soundquest MIDI Tools (PC), £20, including postage. Tel Carl on 01507 606956 or e-mail: holygrail@btinternet.com

SAMPLERS

Yamaha RM1X dance sequencer/workstation, amazing condition, was £450 new, sell for £375; Korg KAOS pad, was £265, sell for £180; Samson 550 studio amp, was £400, sell for £280. Tel 01934 510601

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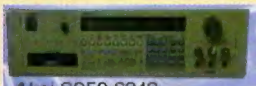

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The final session

Former Editor *Chris Kempster* reflects on six momentous years in music production

The third-ever issue of *The Mix*, in September 1994, contained a review of a software package called Steinberg Cubase Audio V2. Though at the time it received only a guardedly positive review, looking back you could say that this was perhaps a clear pointer to how the future of music production would develop.

Even six short years ago, the music recording scene looked a lot different to how it does today. At the top of the pile was the professional recording studio, featuring the obligatory sofa-sized mixing desk, analogue 24-track reel-to-reel, and rack upon rack of exotic outboard processors. Below this was the project studio which, with its nigh-on professional-standard kit of ADATs and Mackie 8-buss, made release-quality recordings possible for a fraction of the cost of going into a 'proper' studio. And for the rest of us, there was MIDI – an Atari ST, an Akai sampler, and a few synths and modules that fitted nicely into that spare room, yet held the possibility of making us sound like almost anything in the charts.

Little did we know, as we hunched over that black and white ST screen, editing notes on a little grid, that even the most grandiose of professional recording facilities would be working in such a similar way a few years later. But that's exactly what has happened. In the latter part of the '90s, the difference between a professional studio, the project studio and the bedroom studio has narrowed to such a point that it is now almost indistinguishable. Sure, your £1,000 a day facilities might have a fancy 'control interface' and expensive peripherals, but behind all these systems is the one, crucial, piece of equipment that makes it all possible: the computer.

Like in so many other areas of our lives, computing power has proved to be a decisive influence in recording. As the few remaining big recording studios cling onto life, music is being made and recorded (one and the same now) in thousands of homes across the land, the culmination in a recording revolution that started with the TEAC 3440 and Portastudio, continued with the Fostex B16, the Akai S1000, the Alesis ADAT, and a thousand other products that took music production away from the privileged few and gave it to anyone who fancied a pop at recording their own tunes.

Tracking the changes: the music technology revolution has made 'pro-sounding' recordings possible for everyone

But is it a good thing? Of course it is. There will always be some fantastic recording studios that are capable of catching every nuance of a Steinway grand, a string orchestra or a great vocal. There will always be engineers that are experts in the art of mic technique, dynamics processing, and balancing mixes. These are the professionals, and they will continue to produce beautifully-recorded and mixed albums in all spheres of music. But there will also be thousands of other people making music – some of it good, some of it bad – who would not have otherwise if it wasn't so readily accessible – and for that, we have technology to thank. As a certain wannabe revolutionary said in the '70s, "Power to the people!".

On a personal note, I'd just like to thank everyone who's been involved in this magazine over the last six years, especially the writers (who I believe to be the most authoritative team of contributors of any music production magazine in the world), the manufacturers and retailers who have supported *The Mix*, and the current editorial team who have worked tirelessly over the last year to bring you this magazine. God bless and good night...

Chris Kempster

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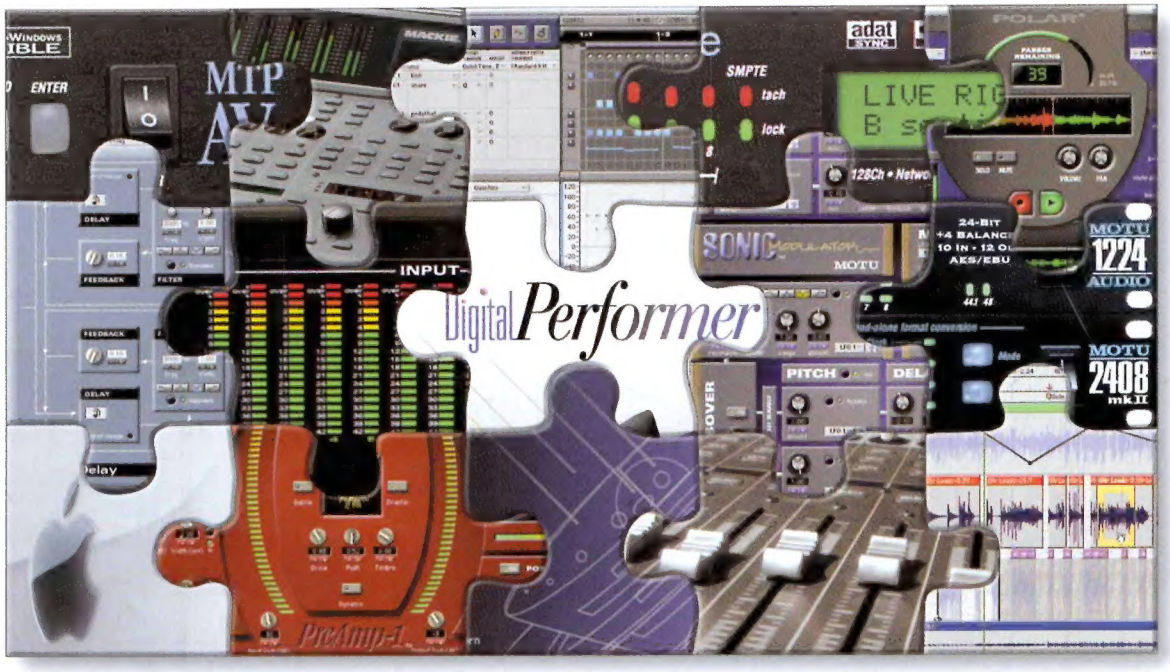

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